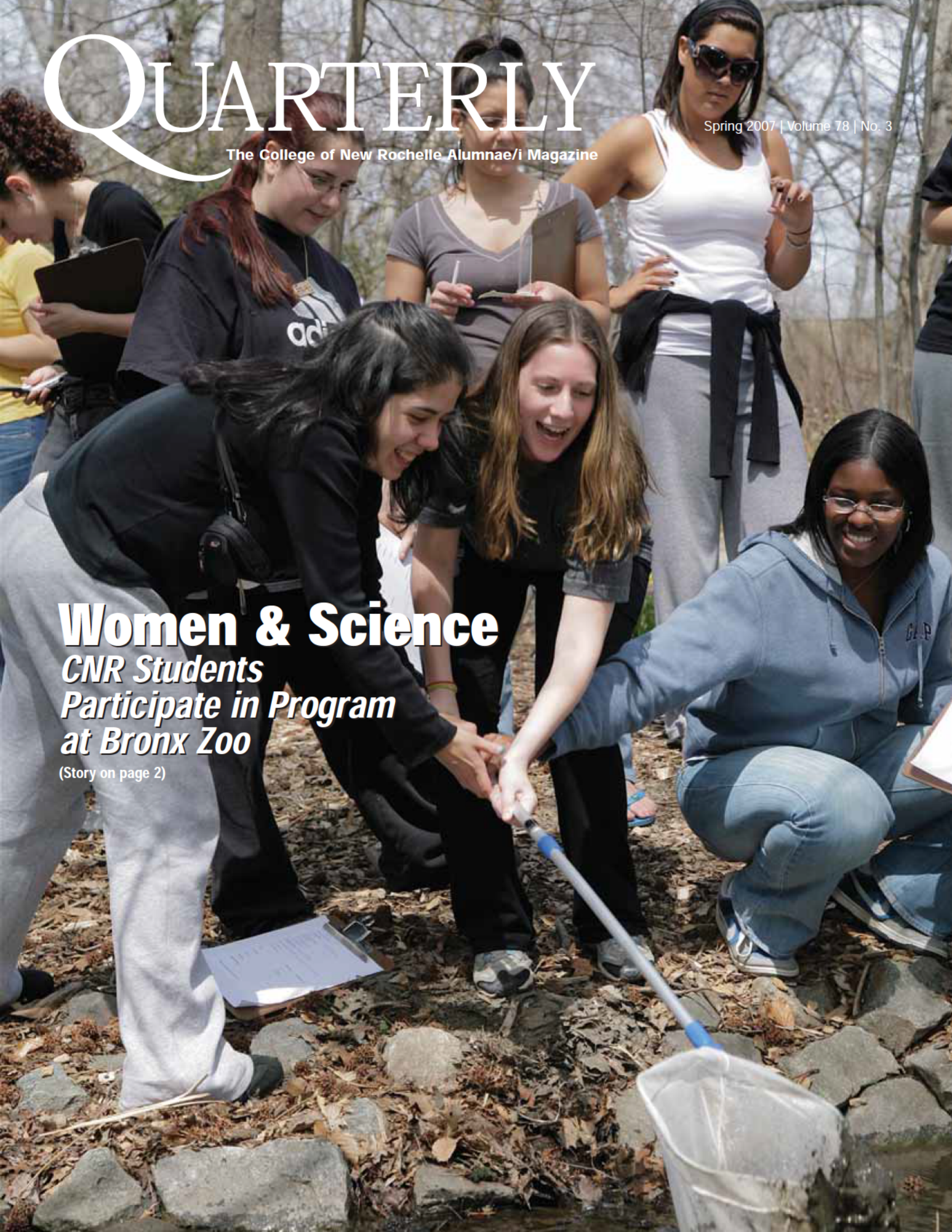


QUARTERLY



The College of New Rochelle Alumnae/i Magazine

Spring 2007 | Volume 78 | No. 3

Women & Science

*CNR Students
Participate in Program
at Bronx Zoo*

(Story on page 2)



Ignorance reigns in our society at a moment when science is on the cusp of doing both amazing and wondrous things and dangerous things. — *Carl Sagan*

In a recent National Science Foundation survey, only about 50 percent knew that it takes the Earth one year to rotate around the sun and that antibiotics do not kill viruses. Scholars estimate that fewer than 7 percent of American adults are truly scientifically literate (and just 22 percent of college graduates). In addition, 70 percent of Americans, approximately 200 million, cannot even understand the science section of *The New York Times*.

In a world where constant scientific discovery abounds and where questions on critical issues, such as global warming and genetically engineered foods, demand answers, the need for a scientifically literate society – to engage intelligently in public debate, to ask the right questions, to make smart choices and even to simply enjoy the wonders of the natural world – has never been more essential.

The United States, once the envy of many, is also losing ground in encouraging the study of the sciences. Estimates indicate that 90 percent of the world's scientists will live in Asia by 2010, just three years from now.

So what steps need to be taken to address these alarming trends before the surge of scientific and technological advances that have driven the United States economy for the past half century ends? On that subject most experts agree that the answer is education.

In this issue of *Quarterly* on science and the environment, we address some of the critical issues raised above by featuring a program being offered at the Bronx Zoo to teachers-in-training enrolled in the School of Arts & Sciences on how to develop enthusiasm for science in elementary school children. We demonstrate the strength of CNR in educating women to advance in the sciences by featuring two of the College's outstanding science teachers over the past century, as well as some graduates who are making important contributions in the scientific field. We answer questions about the environment with the help of one of our own faculty experts and much more. So read on...

QUARTERLY

EDITORIAL STAFF

Editor

Lenore Boytim Carpinelli SAS'89

Associate Editor

Irene Villaverde SNR'04

Assistant Editor

Andrea Hindmarsh Fagon SAS'00

Class Notes Editor

Lisa Skelton

Quarterly Design

Kim Barron

Contributing Writers

Judith Balfé SNR'89, GS'91 & '97

Kristin Berman

John Coyne

Faith Kostel-Hughes

Gary Rockfield

Frederick Romano

Photographs

John Coyne

Peter Finger

Rob Morgan

John Vecchiolla

Letters to the Editor and editorial correspondence should be directed to:

Lenore Boytim Carpinelli SAS'89

(914) 654-5272

Email: Lcarpinelli@cnr.edu

Class Notes columns and correspondence should be directed to:

Andrea Hindmarsh Fagon SAS'00

(914) 654-5285

Email: afagon@cnr.edu

DEPARTMENTS

31

Campaign News

34

Along Castle Place

38

Branching Out With SNR

40

Student Profile

42

Faculty/Staff Focus

(follows page 22)

Class Notes

QUARTERLY

The College of New Rochelle Alumnae/i Magazine

22

On the
Science
Frontier



10

The Science
of Teaching
CNR's
Outstanding
Scientists

2

Bringing Science to Life

CNR Students Participate
in Bronx Zoo Program



14

Take a Deep Breath
Examining Critical
Issues in the
Environment



20

CNR Goes Green



Cover: Learning about water in the environment during the Bronx Zoo program, CNR students Patrizia Crecco SAS'07, Grace Milzoff SAS'08 and Joanna Levy SAS'07 take a sample of sediment from a river tributary as (rear from left) Laura Zaglauer SAS'07, Lucia LoMedico SAS'07 and Diana Conte SAS'08 look on.

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By
Frederick
Romano

Bringing Science to Life

As Henry the Eastern Screech Owl emerges from his carrier perched upon the hand of Professor Shellye Valauskas, the uniform chorus of “awwwh” rises from the students. Explaining that the gray and speckled owls are even prettier, Valauskas then looks into the glowing eyes of the brown and reddish creature on her hand and says, “No offense.” Laughter fills the room. Her students are hooked.

Captive audience now in tow, the lesson then begins in earnest, with the students using their observation skills and Valauskas guiding their inquiry. Henry is examined from head-to-toe as the students learn of his physical and behavioral adaptations – talons for hunting, hollow bones for flight and bark-colored fur that serves as camouflage among them. Valauskas lets the students ask many of the questions and supply their own answers while guiding them to further examination and providing the pay-off when they are stumped.

This engaging mini-lesson is just the tip of the iceberg in “Beyond the Campus,” a unique, stimulating and progressive course for future elementary school teachers, offered on the grounds of the historic and world-famous Bronx Zoo. Along with students from three other local colleges, CNR students are this spring participating in their third session of Beyond the Campus, which was introduced by the Wildlife Conservation Society at the Bronx Zoo last year. Sub-titled “Using Animal Themes to Motivate Learning Across the Disciplines,” the undergraduate course is designed not only to teach prospective teachers background in life science content, but also the skills to integrate science with language arts, social studies, math, art, music and more.

Later in Valauskas' class the animal observation and student inquiry is repeated, this time with cartoon-like Elwood the Fennec Fox, whose exaggerated ears and gangly legs somehow manage to elicit an even stronger response than the highly popular owl. Valauskas encourages the students to look beyond the fox's curious traits to discover the adaptations that nature intended his physical characteristics to serve. Before Elwood is returned to his carrier, the excited student-paparazzi record it all for posterity on their cell phone cameras.

"Traditionally, science was taught as a separate subject and involved a textbook and lots of memorizing," explains Valauskas, the course instructor and a teacher trainer for the Wildlife Conservation Society-Bronx Zoo. "This trend has been changing for several years now, and it is our hope that the students completing this course will teach science differently."

"We have found that throughout our education program, the students do far better when they are able to practice hands-on," says Dr. Ruth Zealand, Associate Professor of Education

Dr. Lynn Petrullo, Professor of Biology in the School of Arts & Sciences at CNR, believes that "right now, with respect to research and innovation, the United States is still globally competitive" but cautions that if the appropriate adjustments in math and science education are not made, "the declining pool of qualified American students will result in our nation being less viable in these areas." She continues, "It will catch up with us at some point in the near future as U.S. colleges and universities graduate fewer professional scientists, mathematicians and engineers."

Gaining the Global Edge

If the United States is to compete on a global scale, the litmus question is: When should the process of preparation begin? Linda Teubl GS'02, an adjunct professor in the Graduate School at CNR and a pre-school teacher, who incorporates a great deal of science and math into her curriculum, recommends that the process of educating adults who can compete in the areas of science and technology globally begin no later than the elementary-school level.

CNR Students Participate in Bronx Zoo Program

in the School of Arts & Sciences at CNR, who coordinates the program between the College and the Bronx Zoo.

The rise of alternative methods of teaching science, such as those utilized in the Beyond the Campus program, is not rooted in the whimsy of administrators and teachers but was created in response to a very real and fundamental threat to science literacy in the United States – a worrisome situation that has been brewing for decades. The evidence can be traced back nearly 25 years to an assessment by the National Science Board's Commission on Pre-college Education in Mathematics, Science and Technology, which found U.S. students' achievement in these subject areas wanting. Lofty goals set by that Commission to make the U.S. the "best in the world by 1995" fell woefully short, and at present, even the most advanced U.S. senior high school students are performing at or near the bottom of the international student pool.

Recently, the United States placed 27th among countries that participated in an international test evaluating students' understanding of math. And further evidence even suggests that the country's competitive capabilities are moving in the wrong direction. A 2004 study by the National Academy of Sciences showed that China and India are producing engineers at eight and six times, respectively, that of the U.S.

Consequences of the loss or further erosion of any remaining competitive advantage which the United States holds could be dire. As indicated in the recent best-seller *The World Is Flat*, at present, scientists and engineers are not being replaced in sufficient numbers for the United States to maintain its economic position in the world.

"Even in an elementary program," she explains, "what you want to teach the children in a science curriculum are the tools of the professional. You want them to know the real scientific method of doing things – to become scientists even in 1st and 2nd grade."

Providing the students with this kind of base in early childhood, Teubl reasons, will prepare them when they reach the much more demanding sciences of middle school and high school. Conversely, if such introduction is deferred to the 6th or 7th grade, students are much more apt to believe that the challenge before them is not within their capabilities.

According to Teubl, the process of molding future professionals is multi-dimensional. Technical skills must be transferred to the students through a science curriculum that includes the appropriate process skills, while developing and nurturing a love of science, so they flourish at the middle and high school levels.

Indeed, shared goals of CNR's Education Department and Beyond the Campus include guiding the elementary school teachers-in-training through a curriculum that not only stresses technical skills but also leaves the students with a love and enthusiasm for science. These goals are achieved through the use of exemplary science teaching practices, such as inquiry learning, cooperative/collaborative learning, problem-based learning, hands-on, minds-on activities and daily reflection.

Exhibiting a strong passion for her subject, and an impressive depth of knowledge, Valauskas transforms a classroom of simple desks and chairs into part jungle safari and part scientific

(Continued on page 4)



Bringing Science to Life *(Continued from page 3)*

laboratory. As with her live animal presentations, books, photographs, charts and the written word are de-emphasized in the lesson on color and sound adaptations of animals in favor of a visceral approach. Within this program, students also participate in groups to perform experiments.

As part of the lesson, Valauskas challenges her students to work together on three different activities to solve puzzling scientific questions. The thrust of these exercises is to equip future teachers with the means both to illustrate and articulate the answers to typical questions raised by elementary-level science students.

In one of the problem-based lessons on why the sky is blue, a group of eight students, equipped with some predicate knowledge on their topic, surround a rectangular-shaped plastic container filled with water. The lights are dimmed and a flashlight shone through the container creates a varied spectrum of colored light. No sooner do the lights go back on, when a cacophony of “why” questions come forth from the students, and they eagerly engage one another collectively to resolve the questions at hand.

While enlightening her students through problem-based learning, Valauskas also misses no opportunity to integrate other objectives and goals of the program. “This is something you might want to write about in your journal,” she points out on several occasions to her students, who are being taught to be both stronger students and more capable future teachers through the process of daily reflection.

In another experiment, a pencil is placed in a glass of water, resulting in a refraction of light that creates an interesting appearance. When one student has a problem seeing it, “Put your head up and look from here,” advises another student, assuming the role of teacher in guiding her colleague. Like many of the activities in the program, the valuable aspect of these observations is that they are able to vividly bring science to life, yet they can be conducted in any classroom, on any budget, with practically any age group.

Hands-on experiments are an important part of the Beyond the Campus curriculum, and many educators believe this approach to be one of the indispensable tools in the development of competent young science students. Linda Teubl believes that at the grade-school level, in order to develop both

Priscilla Melo SAS'07 and Rosa Sgarlata SAS'07 discuss the giraffes with Jennell Ives (left), one of the course instructors.





future professionals and well-rounded science laymen, one must start with a strong curriculum that includes these types of activities.

“A well-designed elementary science curriculum,” she explains, “should stimulate students to ask questions, to identify problems, to design ways to answer their questions and to solve these problems. [It] will facilitate the learning of the skills of inquiry and how to pose the correct questions that will help students improve their level of literacy.”

Not only does this type of science curriculum increase the basic scientific literacy of the students, Teubl observes, but it has the ancillary effect of developing other competencies in students. Students learn to look beyond literal meaning, to develop deductive reasoning skills and become more abstract thinkers. These skills translate to all aspects of learning. Teubl concludes that if students participate in a superior elementary school science program, they will have a very good level of science literacy by the time they leave that program.

Teaching the Teachers

Providing teachers-in-training with lessons that will allow them someday to build their own strong curriculum has not only been incorporated into the Beyond the Campus program, but lies at its very heart. In one such lesson at the Saturday morning program, the students move their observations to the Asian rain forest of the Zoo’s JungleWorld exhibit, where they are given the opportunity to practice student activities in the company of live black leopards, silver leaf monkeys and blood gibbon pythons.

In JungleWorld, the aspiring teachers participate in two simple, age-appropriate lessons, emphasizing practical applications they can use in their future classrooms. In the first exercise, Adaptation Match, geared to children in grades 4 through 6, students observe three animals in the exhibit and record as many of their physical adaptations as they can



As part of their Water in the Environment lesson, CNR students examine life in the Bronx River. Above top: Patrizia Crecco SAS’07, Grace Milzoff SAS’08 and Joanna Levy SAS’07 take a sample of sediment from a tributary of the Bronx River as Bronx Zoo instructor Shellye Valauskas (right) looks on. Above bottom: Joanna Levy SAS’07 and Jennell Callwood SAS’08 test water quality from a tributary of the Bronx River.

identify. The second exercise, for children in kindergarten through the 3rd grade, Color Challenge, requires the students to identify the names and colors of animals with the goal of developing the students’ observation skills – skills which serve as a foundation from which to someday tackle multi-layered tasks such as Adaptation Match. What is great about Color Challenge and Adaptation Match, Valauskas points out, is that

teachers don’t need to go to the zoo to use them, but can use photographs and videos to achieve the lesson’s goal.

In its second year, the program is proving valuable to teachers-in-training in many ways. From a technical standpoint, Valauskas notes that the program provides pre-service teachers with “a wealth of knowledge and various techniques for teaching science in the classroom.” She
(Continued on page 6)

Bringing Science to Life

(Continued from page 5)

believes that the program's most valuable contribution is its elimination of the "fear of science" that many teachers experience. It illustrates firsthand that it is not necessary to be a trained scientist in order to understand and teach science.

Ruth Zealand believes that the program also assuages other types of student trepidation. The program's "workshop format makes it more relaxing for the students," she explains. "Although there are multiple assessments to measure the outcomes of the program, it isn't a situation in which the students' learning is solely from a textbook."

She also heralds the program's comprehensiveness, immediacy and relevancy, and the benefits of its hands-on approach. The students "become the scientists; they become the researchers, so they are active students." These ingredients, she offers, make it very easy for the students "to not only be enthusiastic when they are at the program, but when they go into their own classroom they can bring something very new and very fresh to their students." The Zoo facility is also a resource which will continue to inspire through future visits, points out Zealand, since most of the CNR students who participate will eventually student-teach or take teaching jobs near the Zoo.



Joanna Beninati SAS'08 and Diana Conte SAS'08 look at adaptations of wetland animals at the Aquatic Birdhouse.

CNR senior Rebecca Mui, who participated in the program last year, is presently finishing her certification in Childhood Education at the College. She student teaches in the 2nd grade at Trinity Elementary School in New Rochelle. From Mui's perspective, one of the most important features of the program is its ability to bring science out of isolation. Through its numerous interdisciplinary exercises, the program revealed to her how science interacts with other disciplines such as art, math and social studies, and she looks forward to applying the interdisciplinary techniques that she learned in her future classrooms.

Mui also valued the hands-on aspect of the course and the numerous ways in which it allowed students to take ownership of their experiments. "I think that self-motivated learning and hands-on learning is what really sticks with children. It is what really changes them, makes them understand what they learned and makes them want to participate."

Michelle Dawkins, who is studying for her dual certification at CNR in Elementary Education and Early Childhood Education, is currently a student teacher in the 2nd grade at P.S. 119 in Brooklyn. Dawkins has already had the opportunity to integrate some of the



At the Zoo are course instructor Shellye Valauskas (far left) and CNR students (from left) Jennell Callwood SAS'08, Joanna Beninati SAS'08, Diana Conte SAS'08, Laura Zaglauer SAS'07, Joanna Levy SAS'07, Grace Miltzoff SAS'08, Lucia LoMedico SAS'07, Patrizia Crecco SAS'07 and Lori Antico SAS'08.



During a visit to the Congo Gorilla Forest, Priscilla Melo SAS'07 and Rosa Sgarlata SAS'07 interact with the gorillas, as Jennell Ives (left), one of the instructors, looks on.

program's lessons into her own curriculum.

"Science was never my strong point," she admits, "but I am currently working on a science unit for the students in my class, and I am actually using [what I learned in] the course. It has helped me to incorporate fun things into science. Things that you think you can't do with younger children you actually can, and the course helps you to integrate other areas into science." In the future, Dawkins hopes to utilize other interdisciplinary techniques, such as classroom drama.

She also believes in the hands-on approach. "It's better for learning when you are able to touch it. Then you are able to understand it more, as opposed to reading it from the textbook. I think the textbook is what makes it boring for the kids, because they cannot visualize what's happening. But once they have science in front of them and it is tangible, they automatically get engulfed in it and they want to do it. And that's what the Beyond the Campus class does – it teaches you how to bring that information to them."

A Blueprint for the Future

If innovative programs like Beyond the Campus supply a new brand of elementary school science teacher who can build a strong foundation, what should the blueprint for continued development for these students look like?

The 2003 results from the Trend in

Math and Science Study (TIMSS) showed that 4th and 8th grade U.S. students performed above the international average for all participating countries in both math and science. However, such results can be misleading when one considers that "developing" countries are part of the competition. A recent study by The Program for International Student Assessment (PISA), which measures students' ability to apply scientific and mathematical concepts and skills, indicated that 15-year-old U.S. students performed below the international average in math and science literacy. How can U.S. students at the middle school, high school and college levels be motivated beyond their apparent disinterest and passivity regarding science to become competent scientific laymen or leading scientific professionals?

In early 2006, in response to the cries of weak student performance, the U.S. government, through the House of Representatives' Committee on Science, weighed in on the subject. It concluded that the best way to strengthen the country's professional competitive advantage is through comprehensive measures to bolster the resources afforded and the commitment made to both math and science education. An array of platforms has recently been proffered on the legislative level, including the creation of more scholarships, the implementation of stronger recruiting efforts,

the development of teacher training institutes and programs, the availability of advanced courses and an increase in long-term research funding.

Beyond the latest push by governmental policy-makers are the grass-root pundits, the teachers themselves, who have painfully viewed the decline of student performance on a daily basis. The teachers appear uniformly to agree that the development of sustained support and appreciation for science and other besieged disciplines, such as math and technology, is of tremendous importance – not only to provide the U.S. with a competitive professional advantage on a global scale, but also to develop a scientifically literate population who can meet the increasingly complex demands of their personal lives.

Dr. Angela Pagano SAS'94, Assistant Professor of Biological Sciences and Adolescence Education (Science, 7-12) at SUNY Cortland, trains teachers who will soon face the challenge of shepherding the students through the middle and high school years. She believes that to develop scientific literacy and provide the basis for future competitive science professionals, science programs must equip the student to answer the fundamental question, "Why do we need to know this?"

"In all science what we need to do is to teach science for what it is – an
(Continued on page 8)



Bringing Science to Life

(Continued from page 7)

approach, a method that we use, to explain the natural world," she says. "Science isn't fact, science isn't truth, it's an approach."

Pagano embraces the notion that those students who blossom into the professionally competitive are spawned from the same foundation which also gives rise to scientifically literate laymen. In order to produce a scientifically literate person, Pagano argues, we need to develop "a person who can understand the approach well enough that they can apply it to things they see around them so that they can critically examine claims."

However, for those pursuing science as a profession, Pagano advises a further step be taken. "We need to train stu-

dents on how to use that approach to answer questions. We need to make sure that the individuals who want to go into science truly understand that process and know how to use it." In addition to mastering this process, Pagano believes that to prepare competent professionals, an additional level of detail must be supplied in the curriculum.

While the issue of competition on a global scale is important, the fact remains that the majority of students who traverse the school system will not use science in their professional lives. Nevertheless, due to changes brought about in our rapidly changing world, science literacy for this group has become more critical than at any other time.

Pagano believes that it is extremely important to teach science education in

a manner in which the scientific literacy developed will have practical applications for students as future citizens. Paramount among these areas, she says, is understanding politics through science. Scientifically literate citizens can better assess political candidates and issues of science regarding policymaking, including environmental policy and a host of relevant issues regarding funding science, she points out.

She further argues that a scientifically literate citizen can better understand health care, the available options and can make more informed decisions on which drugs to use or not to use. Additionally, scientific knowledge creates a savvy consumer, not only regarding drugs, but for all products in which the consumer must discern the veracity of product claims. "Being able to critically look at those claims and decide if they are valid is so important," Pagano notes.

The Role of Women's Colleges

Lynn Petruccio finds that women's liberal arts colleges can play a crucial role in achieving the goal of enlightened, civically engaged citizens. "We need to teach science through courses that are more relevant to students' lives," she explains. "As part of CNR's liberal arts core curriculum, we teach science in an interdisciplinary context through such courses as Human Ecology, Chemistry and Health and Art and Science Parallels." Noting that scientific findings and technological results, such as global warming and stem cell research, respectively, produce issues that are highly political and often controversial, she points to the more literate citizens' ability to "understand the debate more clearly and exercise voting privileges more astutely."

According to Petruccio, another valuable contribution women's colleges can make is in training student teachers to understand the relevancy of science. "If these pre-service teachers appreciate the importance of science in their daily



Joanna Levy SAS'07 identifies wetland types and studies adaptations of birds who live there in "The Wetlands Explorers Hunt."



lives,” she reasons, “they will be better suited to demonstrate it to their future pre-college students, making their teaching of science, along with the three ‘R’s,’ a focal point of their instruction.”

As evidenced by the overwhelming number of females in the Beyond the Campus program, the important role that female science teachers will play in our future cannot be over emphasized enough, nor can the role of women’s colleges in ensuring their success. Studies indicate that graduates of women’s colleges are more likely to pursue careers in the sciences than female graduates of co-educational institutions.

Explaining some of the reasons for this trend, Shellye Valauskas says, “Women’s colleges tend to encourage leadership skills in women more often, provide students with more female role models and provide extensive encouragement for students to focus on traditionally male-dominated fields of study.”

As a small women’s college, says Ruth Zealand, CNR is providing this type of leadership and direction, through its small student-to-faculty ratio and a focus on student participation through internships and research opportunities.

These experiences are not always available in larger co-educational institutions, yet at The College of New Rochelle, these special opportunities are evident through students’ participation in programs such as Beyond the Campus.

Returning from their exercise at the Zoo’s JungleWorld, the students trail Shellye Valauskas along a series of winding paths. In the distance, the roar of a lion cuts through the cool air. Undoubtedly, for the students, thoughts of their new friends, including the Ebony Langur and the Wrinkled Hornbill, are still fresh in their minds as they arrive back at their classroom to the harmonious chirping of birds.

Observing the students participating in the course, Ruth Zealand points out that one of the greatest benefits of Beyond the Campus is undoubtedly the



Above top: Rebecca Mui SAS’07, Dhiya Saeed SAS’07 and Shantia Whitehead SAS’08 present a lesson on geology as part of their final presentation for the course. Above bottom: Spotting a woodchuck during a search for natural wildlife in the area are (from left) Lucia LoMedico SAS’07, course instructor Shellye Valauskas (with binoculars), Grace Milzoff SAS’08 and Lori Antico SAS’08.

long-term enthusiasm for science that it creates in the future teachers – the program’s unique ability to make an indelible impression. After all, she says, “How often do you get to touch an alligator?”

Frederick Romano is an attorney, published author and freelance writer, who lives in New York City. He has written on the topics of film, sports, real estate and education.



The Science of Teaching

CNR's Outstanding Scientists

By Gary Rockfield

Encouraging women in the sciences has long been a strength of The College of New Rochelle – and as a result legions of graduates, armed with a solid educational foundation and inspired by outstanding female role models at CNR, have gone on to make their mark in a field long dominated by men. Among those role models are two exceptional women scientists – widely published and internationally known experts in the scientific arena – Mary Virginia Orna, OSU and Mary Dora Rogick.

MARY VIRGINIA ORNA, OSU

Say “chemistry” and the mind conjures up a colorless landscape of white lab smocks, clear test tubes and icy metal Bunsen burners.

But longtime chemistry professor Mary Virginia Orna, OSU, learned to view this landscape from a whole new angle and opened her students’ eyes to the surprisingly colorful side of science.

“Here at CNR we have a very strong art department with a science requirement – and the art majors were scared to death of science,” Sr. Mary Virginia recalls. “The art department chair, Mary Jane Robertshaw, OSU, came to me and said, ‘Can we do something about this?’

“So we sat down and looked at what art and science had in common: form and color. I didn’t know anything about either of these,” she readily admits, “so I took a sabbatical to learn about them.”

Joining a study program at NYU’s Fine Arts Center in 1978, the chemistry professor in search of artistic perspective met art experts looking to beef up their scientific savvy. A collaboration naturally sprang up, with Sr. Mary Virginia lending her talents to noted NYU art historian Thomas Mathews’ study of rare medieval manuscripts.

The Art of Science

Using X-ray diffraction and other painstaking methods to analyze and date these mysterious works, “our research enabled us to publish a medieval palette – the particular pigments, the particular chemical substances that Armenian and Byzantine artists of the period used.”

Sr. Mary Virginia’s team revealed how these medieval monks, lacking the convenience of modern toner and printers, cooked down anything from lapis lazuli to horse dung to create their dyes and pigments. Discovering precisely what these works are crafted from has provided museums with important



Mary Virginia Orna, OSU

clues on how to classify and preserve them, and even helped expose several forgeries.

While integrating her experiences into CNR coursework, Sr. Mary Virginia's 25 years on these projects also established her as a leading expert on the molecular basis of color and the use of chemistry in archaeology and art history.

Winning a Fulbright award enabled her to teach and work in Israel from 1994 to 1995, providing an exciting chance to examine pottery and textiles dating back to King Herod. "The ancient Hebrews knew how to produce the highly desired color purple from sea snails – but it took 50,000 snails to create just one gram of dye."

And Sr. Mary Virginia often knew just how those snails must have felt, because one constant demand on her work was the excruciating care and patience needed when handling incredibly fragile ancient relics. Because nervous museums will hardly lend out a 14th-century manuscript the way Blockbuster lets you rent a Sandra Bullock flick, researchers had to bring all their needles, scalpels, microscopes and other equipment for many long hours of on-site analysis.

Why such painstaking effort? "All research is minute and painstaking," Sr. Mary Virginia responds. "If you have all these great ideas about making a discovery and winning the Nobel Prize right away next year, forget it. It's a lot of work, but you don't care because you're interested."

A Curve from St. Ursula

Raised in Nutley, New Jersey, this future scientist's interest was first sparked at age 10, when her brother got a chemistry set.

"The toys that girls were given were so passive – what can you do with a doll? I guess I was just looking for action." At a time when other girls might have been learning to make cake batter, she was whipping up batches of sulfur dioxide.

An "absolutely superb" high school chemistry teacher further fed her fascination, although, as Sr. Mary Virginia admits, "It was a subject that didn't come to me all that easily. It was a challenge."

Making it still more challenging, she recalls, education options were so limited for women at that time – even the state university, Rutgers, was men-only in the 1950s. Instead she chose a small Philadelphia college, then grad school at Fordham.

That's when the chemistry teacher at the nearby Academy of Mount St. Ursula fell ill and Fordham was asked if they could send someone over to help. "Among all the teaching assistants, I had the only class schedule that fit with the high school's. So I was elected, even though I wasn't too crazy about the idea.

"I had no intention of ever becoming a teacher, but I just fell in love with the job and with the Ursulines. Everyone was so welcoming and so intellectually intense" that she ended up staying at the high school for four years while earning her doctorate.

"At that point I said, 'What am I going to do with this shiny new Ph.D.,' and I decided I was just going to throw it away and join the Ursulines. I say 'throw it away' because there was no guarantee I would ever use it. I said, 'I'm ready to serve; do with me what you want.'

"I was overtaken by God. Nothing really mattered except
(Continued on page 12)



being in touch with God, and that is a lifetime's work. It's something you have to do, the only way you can ever be happy. And that," she admits, "doesn't make sense to very many people."

God, Man and Molecules

So the chemistry graduate was ready "to scrub floors or be sent to Timbuktu. But CNR is where they sent me." And it's where she has taught since 1966, before recently becoming Scientist in Residence.

"What really has informed my teaching was the chance for students to encounter God the way I encountered God. But you don't put God in people's faces and say 'Here!' As Erasmus said, you point to God by the way you live your life. And so in the classroom I always look for the opportunity to inspire students with wonder.

"We're looking at how molecules behave, at the wonderful things you can do. It can be really exciting to look at a certain chemical reaction. It's all part of a magnificent creation. Of

course, there are many practical and professional reasons to study chemistry, but it also makes you a better person, if you can open your eyes and ears.

"There's nothing in Catholic teaching that is contrary to science," she emphasizes, when asked about the disconnect some see between fact and faith. "When you talk about science you are talking about the material world, and when you talk about religion you are talking about the spiritual. One is not subordinate or superior to the other.

"Any kind of scientific discovery, as long as it brings forth truth, cannot be opposed to God, who is truth embodied. Sometimes you have to give things time, let truth percolate out. Sometimes it takes the distance of even several centuries to know what is really true."

But ignorance, as in the Middle Ages, can hold back the tide of truth. "The people in charge then did not understand scientific phenomena, and anything out of the ordinary was attributed to the Devil. You had the mentality of an institution that has everything to lose and nothing to gain from innovation or individual thought."

Asking the Right Questions

If you crossword fans were wondering, this *is* also the Mary

MARY DORA ROGICK

For a renowned zoologist, it just doesn't get any better than having a bryozoa named after you.

That's how one fellow scientist honored Dr. Mary Dora Rogick, for a lifetime spent studying these tiny aquatic creatures.

On a somewhat larger scale than the *Rogicka* bryozoa, the Life Sciences building at CNR also bears Mary's name, saluting her nearly 30 years here as a leading researcher and inspirational teacher.

Hired in 1935 – after the young Ph.D. wrote to 200 schools during the depths of the Depression – Mary served as zoology professor and biology department chair until her death in 1964, claimed by cancer at just 58 years of age.

"CNR didn't realize just how outstanding a scientist she was until she passed away and so many people contacted the College about her," recalls Richard Cassetta, an associate professor of chemistry at CNR for more than 40 years now. "She was a pearl in our midst."

And a pearl that was formed in humble surroundings. The Pennsylvania-born daughter of Croatian immigrants, Mary was the only one of four siblings to live past infancy. But after earning degrees at the University of Nebraska and Ohio State, she rose to international stature as an expert on bryozoa to become one of the very few women of her day to be recognized by the *American Men in Science* reference guide.

"She was a brilliant scientist and her life was her science," Cassetta says, adding that he never saw her without a smile.

Along with broader scientific works, Mary published more than 40 articles about bryozoa (marine and freshwater organisms, which grow by the millions in colonies often resembling moss or coral).

She earned a major grant from the National Research

Foundation for one eight-year study of Antarctic bryozoa and devoted many summers to teaching and research at Woods Hole Marine Biological Laboratory in Massachusetts. And all this while handling a heavy CNR classroom load as well.

"She certainly was not a gadfly," recalls Mary Russo, OSU '35, a former CNR dean and professor *emerita*. "You did not see her much at teas and other social events. She was in her lab at all hours of the day and night." She even built a lab in her New Rochelle apartment.

"But she was a very gracious lady when you met her, and she did wonderful work for her students and her department."

"Mary was a wonderful teacher," agrees Margaret Reilly Antalec '59, now a respected pharmacology expert. "I switched majors to biology in my junior year, so I had to take three years of it all at once. I never would have made it without all her help." With that help, many of Mary's students went on to fulfilling careers in the sciences.

With students or by herself, Mary was a familiar figure along the local beaches at low tide, scouring the rocks for fascinating finds. But she also traveled to study and catalog the world's more than 5,000 bryozoa varieties. One memorable project was a two-week expedition through the Sargasso Sea around Bermuda, aboard the University of Rhode Island research vessel Trident.



Virginia Orna who teased your brains for years with the puzzles she authored for *The New York Times*. But even now, with more time to spend outside the classroom, she's just too busy to get back down (and across) to that old pastime.

Instead she's focused on program planning for the American Chemical Society (ACS), including a symposium on meeting developing countries' desperate need for water. She is coordinating editor for the monthly *Journal of Chemical Education* and is updating six of her books on chemistry education.

Sr. Mary Virginia also was packing recently for a trip to Rome, leading a group of some 30 travelers to view archaeological wonders from a scientific perspective. The next tour she's planning is a 2008 jaunt through Germany and Austria to study the chemistry of raw materials.

In 1999 Sr. Mary Virginia was given the Pimentel Award, the ACS's highest honor in chemical education. No matter how fast science has advanced since the sister fired up her first Bunsen burner, she says the cornerstone of teaching it well is still prodding students to think critically.

"A really good course shows you how to ask the right questions to function in the everyday world and have some sense of where you can find the answers." (Her first hint to students: "How long does my paper need to be?" is not the right question.)

"We were on the rolling sea the whole two weeks," Mary recalls in her 1963 Christmas newsletter, adding an effectively nausea-inducing doodle of a small ship on big waves. "I didn't get sick but Oh, did I have black-and-blue marks from bumping into things. We had microscopes on board, firmly fastened to the tables. Whatever wasn't fastened scooted off in no time once we began to roll – even food off the stove and an occasional seaman out of his bunk."

CNR was the perfect fit for a professor who believed the liberal arts are of vital importance to any well-trained scientific mind. Revealing the dry wit beneath a shy façade, it was Mary's artistic talents that many friends recall most fondly, from scientific illustrations to humorous impromptu chalkboard sketches. She even displayed her whimsical skills as illustrator for a popular book on gardening, Cynthia Westcott's *Are You Your Garden's Worst Pest?*

If still with us today, Mary might admit that her beloved bryozoa are often considered mere pests, with some colonies encrusting ship hulls or clogging drainage pipes. But many others are fascinatingly intricate and beautiful, and they do play an important role in the Earth's fossil record. She would be intrigued to learn that some are now seen as potential anti-cancer drugs.

But whatever they discover, today's researchers are carrying on the work that Dr. Mary Dora Rogick embraced with "intense dedication, modesty and a fine sense of humor," wrote colleague Thomas Schopf. The standards she set "are a model for all those who follow."

Gary Rockfield is a freelance writer/editor who frequently reports on education and business-related issues, as well as unique personalities from all walks of life. An award-winning former newspaper editor, he lives in Brewster, NY.

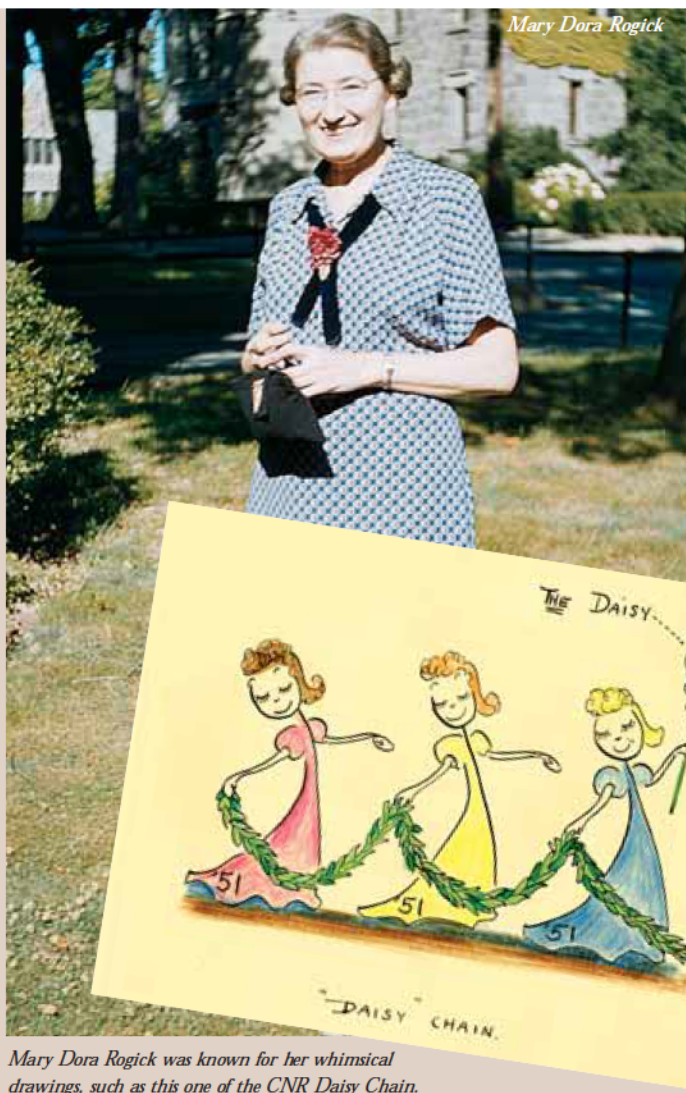
Chemistry teachers, she adds, must be well read, on the alert to show how science impacts students' lives. One good example: "How does sunscreen work? Why are some more effective than others and why do they cost so much?"

She also tries to convey the fateful turns science can take when minds are open to possibility. How, for example, a soil sample collected by one curious researcher while playing golf in Japan led to a new de-worming drug for animals, inspiring another scientist to "tweak the molecule a little" and discover a cure for the river-blindness parasite plaguing sub-Saharan Africans.

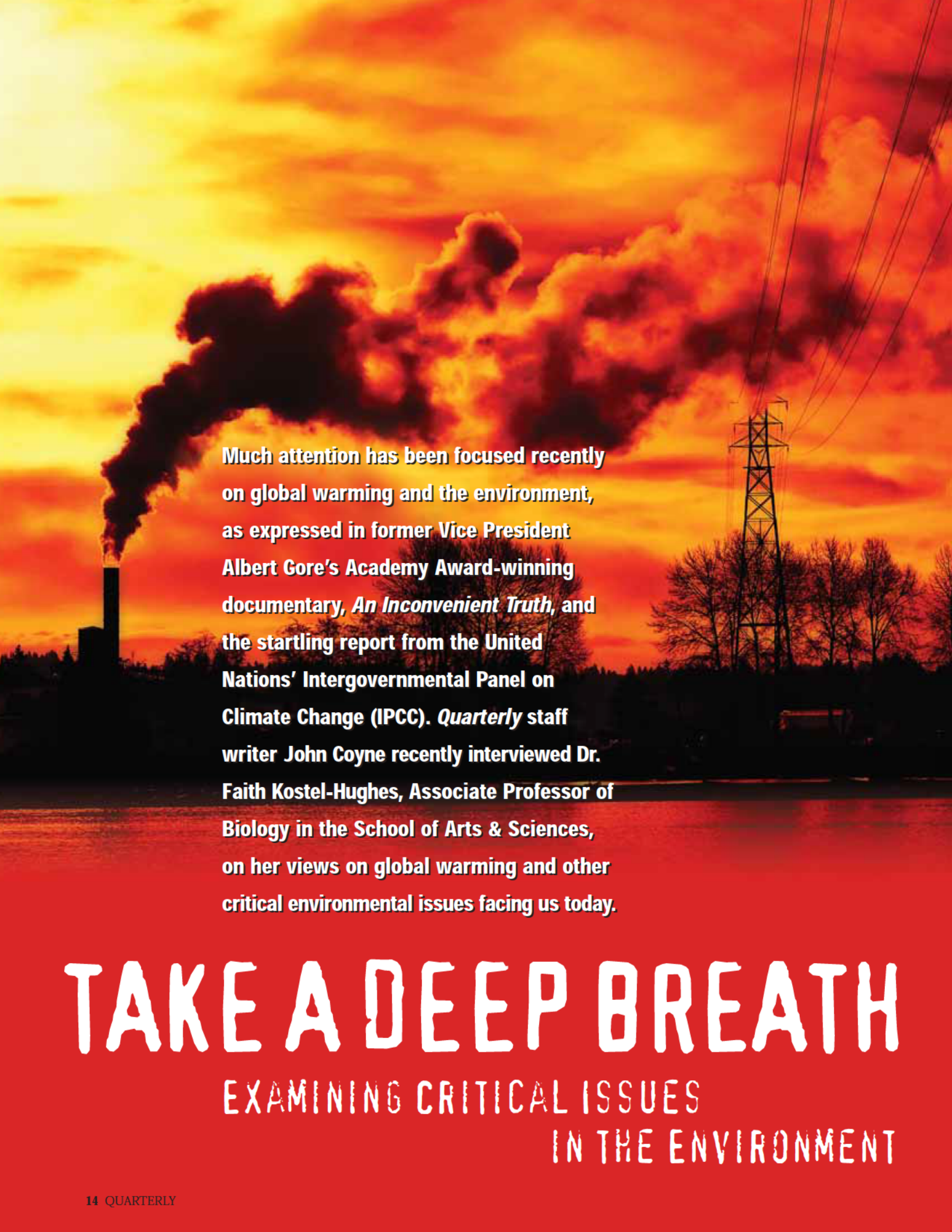
But will female scientists today play a more prominent role in these advances?

"It is still something of an old boys' club, a career that women traditionally have shied away from. As I say to my students, at least when you attend a chemical conference you won't have to wait to get into the ladies room." Turning serious once again, she laments how very few women are elected to the National Academy of Sciences, and that "the number of women in top professorships at our universities is shameful."

Times are changing in some ways, she reflects, with two consecutive women earning the ACS presidency, and females now comprising close to 30 percent of society membership. "Not half-bad, when you consider that back in the mid-1960s I was often the only woman in the room."



Mary Dora Rogick was known for her whimsical drawings, such as this one of the CNR Daisy Chain.



Much attention has been focused recently on global warming and the environment, as expressed in former Vice President Albert Gore's Academy Award-winning documentary, *An Inconvenient Truth*, and the startling report from the United Nations' Intergovernmental Panel on Climate Change (IPCC). *Quarterly* staff writer John Coyne recently interviewed Dr. Faith Kostel-Hughes, Associate Professor of Biology in the School of Arts & Sciences, on her views on global warming and other critical environmental issues facing us today.

TAKE A DEEP BREATH

EXAMINING CRITICAL ISSUES

IN THE ENVIRONMENT

We read a great deal about environmental concerns, global warming chief among them. Is global warming a problem?

Faith Kostel-Hughes: Yes, the reason we're hearing so much lately about global warming is that the IPCC released their fourth assessment report in February 2007. The IPCC is the Intergovernmental Panel on Climate Change and is under the auspices of the United Nations. It basically consists of hundreds of scientists from over 130 countries looking at hundreds of scientific studies. This is the IPCC's most definitive report to date; for the first time they used the word "unequivocal" regarding whether or not the Earth is warming and concluded with a 90 percent certainty that it is due to human activity.

The report points to data like the increased levels of CO₂, carbon dioxide, in the atmosphere. CO₂ is at its highest level in at least 650,000 years. It has increased by about a third since pre-industrial times, and most of that has been in the past few decades. So all the data really are consistent with the idea that global climate change is happening, it's human-caused and much of it is attributed to fossil fuel use.

One argument against global warming is that the change in the weather is just a natural cycle.

Faith Kostel-Hughes: Well, 11 of the last 12 years, from 1995 to 2006, rank among the 12 warmest years since scientists started keeping records of global surface temperatures around 1850. One thing we need to distinguish is what we mean by weather and what we mean by climate. Weather is what we listen to in the morning to find out how we have to dress that day. Climates are longer-term patterns, based on averages, over many years. In other words, weather is what we follow from day-to-day; climate is a pattern based on longer time spans.

And our climate is changing?

Faith Kostel-Hughes: Yes, and there is concern it could change at a faster pace than we expect. It's not going to be like the movie *The Day After Tomorrow*, where New York froze over the course of five days. But it could reach what is called a "tipping point."

If we reach such a critical "tipping point," we might see more rapid climate changes. One specific area of concern is the melting of the ice sheet in Greenland. If significant amounts of ice melt or substantial amounts of land ice slide off into the ocean, the sea levels will rise much more than currently predicted, and so Greenland could have a big impact on the pace and extent of climate change.

ALPINE OR MOUNTAIN AREAS IN MANY PARTS OF THE WORLD ARE SUFFERING THE LOSS OF GLACIERS AND SNOW. AND SINCE THIS FEEDS THE RIVERS THAT PROVIDE DRINKING FOR MANY MILLIONS OF PEOPLE, IT CAN HAVE CATASTROPHIC CONSEQUENCES.

What regions of the world would be affected first by global warming?

Faith Kostel-Hughes: The polar areas have been most affected so far and are predicted to change the most. There are already documented changes including reductions in the extent of summer ice in the Arctic and thawing of the permafrost, permanently frozen subsoil layers, in the tundra. Alpine or mountain areas in many parts of the world are suffering the loss of glaciers and snow, and since this feeds the rivers that provide drinking for many millions of people, it can have catastrophic consequences.

And a one-inch rise in sea level would be a tremendous amount?

Faith Kostel-Hughes: An inch may not be that noticeable around here, but several inches may become evident, especially if more intense storms send water further up onto coastlines. The problem with a lot of the reports in the past is they have to give a range of predictions. The news media, wanting to make it newsworthy, seize upon the worst-case scenarios – a 10-degree temperature change or a 20-foot rise in sea level, for example, something really outrageous.

Most of the scientific reports themselves tend to give a range of scenarios, and right now they're predicting maybe a 3-degree Centigrade change. That's where they can put their certainty best. As for sea levels, they've actually gotten a

little bit of criticism from some corners. Some scientists think they've underestimated the likely sea level increases. Maybe it will be less than a foot, maybe half a meter, maybe a meter. Greenland could hold the answer to that; at least, that's what the current data suggest.

Even though such predictions are a big area of uncertainty, and so are subject to criticism by skeptics, the insur-

ance companies seem to be taking concerns about sea level rise quite seriously. Some insurance companies are being very particular about offering or renewing homeowners' policies in coastal areas, even in New York City.

Could you describe how global warming will affect us directly and immediately?

Faith Kostel-Hughes: New Rochelle, being near the Long Island Sound, would be somewhat affected by a significant rise in sea level and more frequent and intense storms, although the Sound is rather sheltered. Probably the way it would affect people most directly is in how our lifestyles might change.

It is likely there will be measures taken by government and businesses to reduce CO₂ and other greenhouse gases to reduce global warming. Some of those measures will be voluntary, while others will be regulatory. There will be a heavy emphasis on transportation and ways to reduce consumption of fossil fuels. I would expect to see more energy-efficient cars, maybe more incentives for carpooling and public transportation. It will depend on advances in technology and on our leaders at all levels of government whether this can be done with little disruption or inconvenience to people's daily lives. In any case, people will probably have to become much more mindful of conserving resources.

(Continued on page 16)

IT IS NOT GOING TO BE A HUNDRED DEGREES EVERY DAY
FROM JUNE TO AUGUST, BUT WE COULD GET STRETCHES OF
SEVERAL DAYS IN A ROW OF THOSE HUNDRED-DEGREE-OR-MORE DAYS.
AND EXTREME TEMPERATURES HAVE A BIG IMPACT.

Take a Deep Breath

(Continued from page 15)

In the New York area, it will likely get hotter during the summer. What they predict is longer stretches of higher temperatures. It is not going to be a hundred degrees every day from June to August, but we could get stretches of several days in a row of those hundred-degree-or-more days. And extreme temperatures have a big impact.

Heat waves have consequences in terms of direct mortality. They harm people with cardiovascular and respiratory diseases, particularly the elderly. Those who don't have access to cooling centers in urban areas, or enough water in rural areas, are going to be most affected. In 2003 Europe had a long heat wave. France alone had 14,000 out of 35,000 deaths throughout Europe attributed to that heat wave. Europe does not have the wide availability of air conditioning that we have in the U.S., and so many people couldn't escape the heat.

In terms of sea levels rising, the coastal areas, like in Bangladesh that has a tremendous concentration of people on its coast, are going to be hit hard. Already there are small nations – small islands in the Pacific Ocean – that are seeing how the rising sea level is changing their lives. They expect that some islands are going to get swallowed up. This might be the first time entire sovereign nations are relocated to other places. That's monumental.

What can we do about global warming?

Faith Kostel-Hughes: Let's start with something really simple: light bulbs. Sounds too simple, but compact fluorescent bulbs use one third the energy that a regular incandescent bulb uses. The EPA estimates that if each American home replaced just one light bulb with a CFL – compact fluorescent bulb – we'd save "enough energy to light more than 2.5 million homes for a year, and prevent greenhouse gases equivalent to the emissions of 800,000 cars." That's just one bulb a home, not even one bulb a person. Those are amazing figures!

Last semester our Environmental Studies Program and the Environmental Integrity Committee of the Senate here at CNR co-sponsored a screening of *An Inconvenient Truth*, the documentary on global climate change, and we had a compact fluorescent bulb "giveaway." We offered bulbs to students, faculty and staff in attendance at a reduced price of \$1, and many people wanted one. The documentary made an impression on them and they welcomed a chance to make a difference. But not everybody was interested in one, and it may be that those people did not think that such a small act could make any difference at all. That's where more outreach and perhaps other incentives could help.

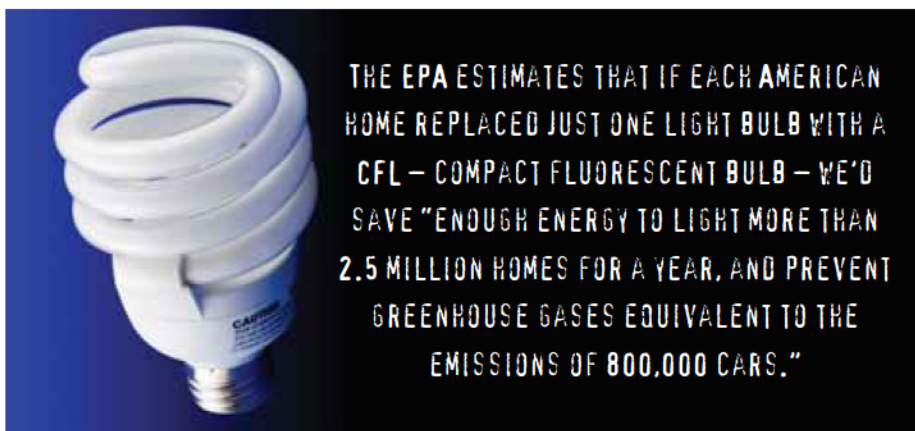
What else can all of us do?

Faith Kostel-Hughes: Recognize that we don't need to take 20-minute showers, or three showers a day, because all that is energy being used to heat water. Walk more, take public transportation. Conserve energy by turning off computers, lower the thermostat, avoid disposable products. These are all steps in the right direction. These are really simple measures, and if we all reduce our energy use, it will have an impact. However, these measures alone may not be enough. Ultimately, we will probably need a cultural shift in the United States that makes conserving resources come naturally, and that could happen yet.

Moving on to another topic, what are the dangers to us of toxic waste and other bio-hazardous materials?

Faith Kostel-Hughes: Wow, that's a doozy of a question. The answer depends on where you live, since some people are more likely than others to be exposed to various types of hazardous waste. That fact is at the very heart of the environmental justice movement and is the focus of one of the courses I teach. Physiologically, we are all vulnerable to exposure to toxins, although children, pregnant women and the infirm are somewhat more so, and there is some variability among individuals.

But in the U.S., facilities that generate toxins and release them into the environment are much more likely to be located in communities comprised of poorer and minority populations. There is a much greater awareness of these injustices now, and so these communities are increasingly speaking out on their own behalf. As a result, it is getting much harder in the U.S. to site these facilities in anybody's "backyard." That should result in a push to develop cleaner technology, and it has to some extent. However, another response has been the increase in the transport of toxic wastes





TROPICAL RAIN FORESTS ARE HOME TO THE GREATEST CONCENTRATION OF BIODIVERSITY ON EARTH. THEY ARE ALSO BEING DESTROYED AT AN ALARMING RATE AND SO SPECIES ARE BEING LOST EVERY DAY, BEFORE THEY ARE EVER KNOWN TO SCIENCE.

to poorer countries for disposal there. This is the same environmental injustice, just shifted overseas. The United Nations has tried to address this problem via the Basel Convention, but there are a number of loopholes in this agreement that have limited its success so far.

As for the specific threats such toxins pose, we tend to focus on cancer-causing agents but there are others. A fair number of chemicals are considered endocrine disruptors because they mimic our hormones and can lead to numerous problems, especially in the reproductive system. Toxins such as lead and mercury can cause neurological impairment, while soot and smaller particulates from burning fossil fuels in power plants and vehicles can cause respiratory diseases, including asthma. But the biggest risk is that industry introduces many new chemicals each year, and we cannot be sure if they will have a negative health effect until many people have been exposed to them for a long period of time, and by then it may be too late.

Is it more important to give people jobs cutting down trees, than to save a forest which can be reseeded within a hundred years?

Faith Kostel-Hughes: First of all, you cannot reseed a forest. You can reseed a plantation, but that is different. A tree plantation does not have the ecological complexity of a natural forest. It does not support the same biodiversity and may not provide the same ecological services.

Secondly, the notion of choosing between jobs and the environment is a false one. Without environmental resources and services, there are no jobs ultimately. We can look at the situation in many developing nations to see the connection between overexploitation of resources and poverty. Wangari Maathai won the Nobel Peace Prize in 2004 for her work on improving the living conditions for people in Kenya through the planting of trees — eventually millions of them throughout Kenya and even other areas of Africa. Economic prosperity comes from sustainable use of our resources.

Do we also have to be concerned, for example, with the loss of rain forests?

Faith Kostel-Hughes: Rain forest protection, particularly in the tropics, gets a lot of attention and understandably so. Tropical rain forests are home to the greatest concentration of biodiversity on Earth. They are also being destroyed at an alarming rate and so species are being lost every day, before they are ever known to science. This is a problem for a few reasons. If you are inclined to be concerned about extinctions of other species and the health of these ecosystems for their own sake, you will regard these as tragic losses. Someone else might be concerned on behalf of the indigenous people who depend on these rain forests and for whom the loss of these areas also means the loss of their homes and cultures. Then there is the concern that destruction of tropical rain forests is contributing to climate change; these forests would normally take in and sequester CO₂, but if they are burned they are actually adding CO₂ to the atmosphere.

If none of those reasons are compelling enough to be concerned about rain forest destruction, then there is the case for enlightened self-interest. Many valuable commodities come from tropical rain forests, including quite a few medicines. It is estimated that approximately 25 percent of prescription drugs in the U.S. are derived from plant species. Since about half of all flowering plant species are found in tropical rain forests, we could expect to find many more potentially valuable drugs in this biome throughout the world. Researchers and drug companies are in the process of screening plant species for active ingredients with possible medicinal properties. This process is expedited by working with healers in indigenous communities who have knowledge passed down for generations on how to use the plants and other species in these forests to cure various ailments. This process has changed from one of "bioprospecting," in which commercial interests exploited these communities by gaining access to their traditional knowledge and their resources while providing little

(Continued on page 18)

Take a Deep Breath

(Continued from page 17)

compensation, to one in which these communities share more equitably in the profits from drug development. This partnership should also lead to more sustainable stewardship of these rain forests.

You mentioned the loss of animal species. Why should we be concerned about animals' survival, not just in the rain forest but around the world?

Faith Kostel-Hughes: We depend entirely on other species (plants, animals, fungi, microbes, etc.) for our survival, and not in the way most people tend to think. We tend to focus on the animals, and particularly those we eat, but they reflect a tiny fraction of the animals on which we depend. In fact, insects make up more than half of all described species. We depend on them for pollinating our crops (and there is currently a honeybee crisis in the United States that could lead to significant crop failure), for breaking down dead organic matter and releasing nutrients back for other organisms to use, and as part of complicated food webs that ultimately lead to many of the creatures we eat. So most of our dependence on other species is rather indirect and therefore hard for most people to recognize and appreciate.

So the loss of one species, as seemingly insignificant as an insect or a frog, can make quite an impact?

Faith Kostel-Hughes: Yes, it can, theoretically. However, there is a good bit of redundancy in nature, so one species may be able to move in and fill the niche of another, but not always. And the extent to which the loss of a species has an impact may be more a function of our priorities than its ecological significance. For example, I mentioned honeybees. They are not native to the U.S., but we have cultivated them and become highly dependent on them in our system of agriculture. As they suffer this severe drop in their populations, we may

be the species that is experiencing the most dramatic impact. Whereas, if the bald eagle or the panda or the

mountain gorilla go extinct one day, those losses might be more significant symbolically and psychologically than ecologically, and yet great efforts are underway to protect these species. So who is to say what is "seemingly insignificant" after all?

Should all students at The College of New Rochelle be required to take at least one course on environmental issues?

Faith Kostel-Hughes: Certainly I would like to see all students graduate from CNR with a certain degree of environmental literacy. But any academic would be expected to have a bias towards the significance of their own field of study. I want to see our students graduate being well educated in social sciences, natural sciences, humanities, math, writing. That is simply the goal of a liberal arts education.

In fact, the Environmental Studies Program is a microcosm of the liberal arts in that it is an interdisciplinary program, which incorporates courses from the natural sciences, social sciences and humanities. It is possible to know a fair bit about environmental science but still not really understand any environmental issue without some background in economics, political science, philosophy, history. These other fields are at least as important, if not more so, in the decisions we make as individuals and as a society regarding the environment and our relationship with it.

What can we do to educate people about the environment?

Faith Kostel-Hughes: Well, many of us are doing our best to teach students in college courses. Even some of our current students have been involved in environmental education themselves as summer camp counselors or giving environmental presentations to community members at nature centers. But those are opportunities to reach people who are already interested in learning about the environment. The tougher part is reaching everyone else.

I have started working with Dr. Diane Quandt, Associate Professor of Education in the School of Arts & Sciences, on a way to improve environmental literacy by offering more training



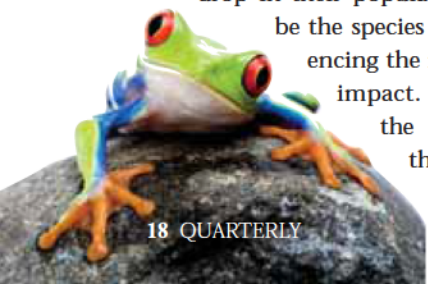
to early and middle school education majors. We are establishing a cognate (a sub-specialty or mini-minor) in which these education students take three environmental courses to better prepare them to teach about the environment. This will entail revising two of the courses they already take to incorporate more environmental principles into them, and then developing a third course that would likely be largely field-based and experiential and geared toward the needs of teachers.

We are both very excited about this, having just heard we received a grant from the Faculty Fund to support this work. This would be the first pre-service environmental education cognate in New York State and could serve as a model for other colleges. It is a great chance to improve the environmental literacy of future generations.

Is there anything else you'd like to mention?

In teaching about the environment, my students and I encounter some pretty sobering reports on an almost daily basis. This could easily lead someone to become numb to these accounts or simply depressed by them. Neither of these reactions is productive if your goal is to understand and address these problems. I try to impress upon my students that just learning about these problems is a step in the direction toward solving them. The hardest problems to resolve are the ones that remain hidden or unspoken. The heightened awareness of environmental problems should be seen as a sign that we, as a society, have reached a stage when we are ready to start tackling them. There seems to be a groundswell of concern from all sectors of society and, given wise leadership, that momentum could translate into a very promising future.

John Coyne is Manager of Communications for The College of New Rochelle.



TRACKING THE INVADERS

Studying Non-Native Earthworms' Impact on Local Forests

BY FAITH KOSTEL-HUGHES, PH.D.
ASSOCIATE PROFESSOR OF BIOLOGY,
DIRECTOR OF ENVIRONMENTAL STUDIES,
SCHOOL OF ARTS & SCIENCES

In a recent report, NASA declared that non-native invasive species may represent the most challenging form of natural disaster in the 21st century. Invasive non-natives can pose a direct threat to native species as competitors, predators, parasites or pathogens, at times leading to significant disruption of ecosystem structure and function. The current economic cost of invasive non-native species is estimated at \$100-200 billion in the U.S. each year. However, not all non-native species establish and/or become invasive when they enter a habitat. While NASA is developing technology to predict and identify which non-native species are likely to become problematic in the future, many ecologists are currently trying to understand and address the impacts of non-native species that have already invaded habitats within the United States and around the world.

My current research, funded by the College's Faculty Fund, is on the impact of non-native species in temperate deciduous forests in the New York metropolitan area. The forests of northeastern North America have been subjected to human influence for thousands of years but the intensity of human impact has increased enormously since the arrival of European colonists. The most significant impact was the near total clearing of these forests for lumber and agriculture from the mid-17th to the mid-19th centuries. As the agricultural center of the U.S. moved to the Midwest, many farms in the Northeast were abandoned and gradually returned to secondary forest.

As a result, there is more forested land in the Northeast today than there was 150 years ago. However, this period of forest recovery has coincided with the

greatest rate of influx, both deliberate and accidental, of non-native species into North America. Ecologists, like myself, who study forests in the Northeast, are compelled to consider the impact of invasive non-native species on these ecosystems.

One group of invasive non-natives that has attracted increasing attention over the past several years includes several species of earthworms originally from Europe and Asia. Native earthworms were eliminated from northern North America during the last ice age. Following the retreat of the glaciers approximately 15,000 years ago, these northern regions remained largely earthworm-free until non-native earthworm species were introduced first by European colonists, then via global commerce.

The earthworm species that are more recent arrivals have gained notice because of the very striking way they alter the forest floor, consuming most or all of the leaf litter by summer's end and leaving behind a thick layer of small pellet-like casts. This leaf litter layer is an important microhabitat that serves as food and/or shelter for invertebrates and small vertebrates, such as salamanders and small mammals. Non-native earthworms also alter soil chemistry, soil microbial biomass and composition, and may be facilitating invasion by non-native plant species. My doctoral dissertation research focused on how earthworm activity affects establishment of native and non-native tree species in local urban forests.

My interest in the impacts of these earthworms was reignited years later when I began teaching at CNR and, in the course of taking my students on field trips, discovered the earthworms were extending their distribution from mainly urban forests into nearby suburban and even rural forests. Since the scientific community first became concerned



Dr. Faith Kostel-Hughes (second from right) discusses the earthworms they collected at Marshlands Conservancy in Rye, NY, with (from left) Megan Skrip SAS'07, Shonda Gaylord SAS'08 and Binh Phong SAS'08.

about non-native earthworms in NYC in the early 1990s, quite a few studies have been published about non-native earthworms in forests in the Great Lakes region, New Jersey and other parts of the Northeast. All suggest these worms can have far-reaching effects that, combined with other stresses on these forests, may be transforming them in less obvious but nonetheless ecologically significant ways.

One of the great pleasures of conducting this research has been including my students in the process at all stages. Students who have taken my Environmental Biology course have participated, helping collect earthworms and collecting data on the vegetation. In particular, Shonda Gaylord SAS'08 and Ashley Melendez SAS'10 have worked closely with me as recipients of CNR's Student-Faculty Research Scholarship. Megan Skrip SAS'07 has participated through independent studies and on a volunteer basis. Shonda, Ashley and Megan have spent considerable time searching through scientific literature, crawling on their hands and knees through the mud, hauling field gear and hunched over lab benches sorting through leaf litter or peering through microscopes, and always maintained positive attitudes. It has been great fun sharing in my students' first ventures into the realm of scientific discovery and to integrate my role as a researcher with my role as a teacher.

In the words of Kermit the Frog, "It's not easy being green." But that is exactly what CNR is doing with the building of its \$28 million holistic Wellness Center, due to be finished in December 2007 and open for the Spring 2008 semester. Significant planning done by the College and its architecture firm, ikon.5, of Princeton, New Jersey, has ensured that the first building constructed on campus in 40 years will be environmentally sound and built with consideration for the Residence Park community that surrounds the construction. This state-of-the-art building is pursuing the prestigious LEED "Silver" rating certified by the U.S. Green Building Council (USGBC).

Building "green," in its most simple definition, is to create a structure that is in harmony with the environment and uses materials, water and energy in such a way that it does not harm human health or the environment. It also involves all aspects of a new building, from design to the choice of building site, to construction, to operation and maintenance. The complete building life cycle is taken into consideration with respect to environmental impact and sustainability.

According to Charles J. Maira, a principal architect for ikon.5, the Wellness Center qualifies as "green" in a number of ways. "The below-grade portion of the building utilizes the grade above for a roof garden, which is then available for use by the College Community and for College functions. Moreover, a large percentage of the building will be constructed with local and regional materials and environmentally friendly recycled materials."

For example, recycled crushed glass and recycled blast furnace slag were mixed into the concrete used for the polished floor slabs, thus consuming less concrete and taking advantage of material that would otherwise end up in a landfill. The building also will have a heat recovery system to recycle energy, so that warm air, instead of being discharged from the building, will run through a system of pipes to warm the pool water and pool area.

In addition, the Wellness Center is designed with large windows, including six skylights, so large amounts of daylight reach the pool area, concourse, gymnasium and the multi-purpose rooms. By taking advantage of available natural light, the building will reduce its dependence on artificial (energy-using) light sources. All of these choices in design and construction earn points towards the LEED certification.

Going "green" at colleges and universities is an increasingly common phenomenon. A LEED certification proves to the community that the institution is committed to sustainability and environmental responsibility.

The certification process, however, takes time and money. A third party commissioning agent evaluates that the project has been designed and built to meet LEED guidelines. This assures both the institution and the community that during construction standard guidelines were met. The benefit for the college is that these standards of construction will mean reduced energy costs, better air quality and superior comfort and quality for users.

CNR GOES GREEN

BY JOHN COYNE

Artist rendering of the Wellness Center, scheduled for completion in December 2007.



According to Joe Tattoni, another principal architect from the ikon.5 firm, "Many colleges and universities are committed to Green Building and are receiving certification from the U.S. Green Building Council. CNR is right in step with what is happening across America."

Recent figures from the USGBC show that a total of 90 college and university buildings have been certified as environmentally friendly and energy-efficient. One example of this trend is the new math, business, computer science and computer engineering building at Pacific Lutheran University in Washington State, which recently received a gold rating from the USGBC. Construction materials for this building included bamboo flooring, recycled carpet and wheat board. Also the building is heated and cooled by geothermal pumps and

produces no carbon emissions.

Some colleges and universities are electing not to seek certification but still designing to LEED guidelines. "We have seen this trend recently with larger universities," says Tattoni. "We suspect it is because these schools already have a few LEED-certified buildings and know how to guarantee the higher performance level, and they have a very extensive campus green program that they have tailored to their particular needs."

Other colleges and universities that are, like CNR, committed to environmental integrity are Carnegie Mellon University of Pittsburgh; Massachusetts Institute of Technology; Duke University; Lewis & Clark College; Northwestern University; and The University of California.

The College of New Rochelle joins these institutions in improving the quality of life for students by creating a building that has environmental integrity while remaining consistent with the College's Catholic heritage that takes seriously our responsibility to be good stewards of the earth.

As CNR President Stephen Sweeny said in announcing the construction of the Wellness Center, "We are not content to simply build a building. We want to bring the strengths of the College to bear on this project and, at the same time, address pressing societal needs." And with the Wellness Center, we are doing just that.

ABOUT THE LEED GREEN BUILDING RATING SYSTEM

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System, the nationally accepted benchmark for the design, construction and operation of high performance green buildings, awards points for specific aspects of a building's sustainability, including environmentally innovative design, site selection, water efficiency, energy efficiency, use of recycled and low-emission materials, indoor environmental quality design and others.

ALUMNAE/I PROFILES

As science and technology multiply around us, warned writer J.G. Ballard, they increasingly dictate the languages in which we speak and think. "Either we use those languages or we remain mute." Meet five women who are determined to have a voice and are fluently shaping our future – from the tiniest healing molecule to the health of the land, air and sea all around us.

On the Science Frontier

BY GARY ROCKFIELD

MARY ELLEN

Masterson-McGary SAS'70

When Mary Ellen Masterson-McGary left New York's famed Memorial Sloan-Kettering Cancer Center for a hospital in Naples, FL, she packed the sunscreen, the flip-flops and a driving determination to prove that world-class medical care can be offered at the local level.

And so, as chief medical physicist, she pushed for Naples Community Hospital (NCH) to become just the 17th facility worldwide to invest in a costly but promising new cancer-treatment tool called the CyberKnife.

Taking that plunge nearly three years ago, NCH bravely jumped right in with elite academic giants such as Stanford and the University of Pittsburgh. "We took the financial risk," Mary Ellen says, "and we won."

The CyberKnife has proved to be a major advance in radi-

ation therapy, "And that's what I'm really trying to do – bridge the gap between the academic medical center, where all the major R&D takes place, and the community hospital level.

"I believe we can offer the same quality care, and it's so much better for the patient. They don't have to travel, they can sleep in their own bed at night, be with their family, friends, church."

In 19 years at Sloan-Kettering, Mary Ellen recalls seeing patients fly in from all over the world. "The strain of being away from home is tremendous, not to mention the expense.

"So for the second half of my career this is really what I wanted to be part of – applying all the wonderful advances in oncology at the local level."

Tremendous Payoff

Medical physics, Mary Ellen's specialty, primarily involves treating cancer and other diseases through ionizing radiation;



using radiation for detection systems such as MRIs and CAT scans; and placing radioactive materials inside the body for detection or treatment, such as the seed implants now aimed at prostate cancers.

Joining Sloan-Kettering in the late 1970s, Mary Ellen researched many of these emerging technologies, including mammography.

“At one point Ralph Nader was charging that the radiation used in mammography caused more cancers than it was helping detect. I worked on one major study that helped prove the benefits far outweighed the risk and that early breast cancer detection does save lives. That’s true of so many cancers, and the payoff over the past 25 years has been tremendous.”

But while her work at Sloan-Kettering was intellectually appealing, “Here at NCH I’m dealing more directly with patients, and that is much more emotionally satisfying.”

And thanks to the CyberKnife, “It’s especially satisfying to see people who were terribly ill just a month ago come in for follow-up and be so happy and pain-free. One radiologist looking at a post-treatment CAT scan thought someone had put the wrong name on it, the patient’s lung cancer had improved so remarkably.”

First developed at Stanford, the CyberKnife delivers such precise and potent radiation that only one to five treatment sessions can often do the job. “And you can get right up and go play golf,” Mary Ellen laughs.

Lives Saved: Priceless

The CyberKnife’s list price was \$4.5 million, plus another million to create a special lead-lined room and install the bulky device. Fortunately, Mary Ellen says, “We have a very supportive administration and a very generous community.”

Using the same mathematics that guide the Cruise Missile, the CyberKnife’s six-dimensional system can aim its radiation

I’d really encourage the women at CNR to consider a career in science, and not be dissuaded by the old stereotype that women cannot succeed in science and mathematics.

beam from any conceivable angle. And because the device employs real-time image guidance, it can stay locked onto its cancerous target even while adjusting to patient motions such as breathing – a particular benefit for lung-cancer treatment.

“Previously,” Mary Ellen points out, “you would have to measure the breathing movement and then radiate that entire area, damaging a lot of healthy lung tissue.” The CyberKnife also greatly improves treatment of the prostate, which can move around as much as half an inch.

Best of all, “The CyberKnife allows us to treat patients who might otherwise have no hope, people whose cancer was so close to a vital organ, or the spine, or the brain stem, that it was too risky to operate. Now, instead of handing them a card for hospice, we’ve been able to treat people, with wonderful outcomes.”

The device is also being used to help the unfortunate victims of a disease called trigeminal neuralgia, which causes facial pain so severe, apparently due to an inflamed blood vessel pushing on a nerve, that doctors also call it “the suicide disease.”

In all, about 200 NCH patients yearly are getting CyberKnife treatment, sitting comfortably in the radiation room while Mary Ellen’s staffers lock in the beams from a computer next door.

“We don’t have long-term data yet,” she notes, “but what we have seen is extremely positive, an excellent cure rate and very few complications.” Today the waiting list to buy the CyberKnife is growing, as more medical centers see it’s time to jump on board.

“I’d Ruined My Life”

“I’d really encourage the women at CNR to consider a career in science,” Mary Ellen advises, “and not be dissuaded by the old stereotype that women cannot succeed in science and mathematics.”

It was at CNR where the Jackson Heights native discovered her own knack for physics. But during a graduate stint at Columbia University she began to lose faith it was the right path for her.

“Everyone getting out with a physics degree was either going to work in weapons development or staying in academia to study some arcane formula for 20 years. I didn’t want to do either. I actually wrote to the president of the American Institute of Physics to say I had ruined my life, that there was no positive application of physics that I could see.”

Luckily, the president wrote back, suggesting she go see a friend of his – the chairman of the medical physics department at Memorial Sloan-Kettering.

(Continued on page 24)

Masterson-McGary

(Continued from page 23)

Mary Ellen took him up on that advice, “And after my first 15 minutes there I was saying, ‘Wow, this is so right. This is the place for me.’”

As an added bonus, Mary Ellen later met husband Randy at Sloan-Kettering, where he was helping design new imaging equipment. They moved to Florida seven years ago and have a daughter, Katie, in high school.

Grassroots Perspective

Mary Ellen calls the future bright for cancer treatment and prevention. “I see tremendous advances in the next ten years as genomics helps us understand the mechanics of cancer, so we can devise very targeted treatments to kill those cells. And as nanotechnology helps us deliver these treatments on the molecular level.

“We also never used to have the exquisite imaging systems we have now, such as positron emission tomography (PET). Early detection is crucial, and the more we can get the government to reimburse for screening, the better.”

Reimbursement is one issue she tackles as Chair of the Board of Chancellors for the American College of Medical Physicists. Her selection to that group’s top post is a first for someone not affiliated with a major academic medical center – and she’s happy to be providing a grassroots viewpoint in an industry dominated by those big-name giants.

“At the community hospital level we are very lean on staff and funding, and it can be very difficult to just stay financially viable. Eighty-five percent of cancer patients in this country are treated at community hospitals, and they deserve world-class care. In this country, in the 21st century, we should be able to provide that care, but we have a lot of work ahead to achieve that goal.” ■

JANET

Collura SAS’84

“We’ve already lost 50 percent of America’s wetlands,” laments environmental consultant Janet Collura. But she would happily slog through the remaining 50 percent if that’s what it takes to save them.

Janet has spent nearly 20 years out in the field – an often wet and muddy field – flagging lands, plants and animals in need of protection for Long Island-based Energy & Environmental Analysts Inc. (EEA).

“When someone has a site they want to develop, we grab our boots, hip-waders and binoculars, go out and survey the soil, the surface water, any bird or tree that might be rare for the area. We help tailor what can be built and communicate what needs to be saved.”

Wetlands are particularly worth saving, Janet says, because “they’re home to so many species. They also help filter and clean our own water supply and help prevent flooding and erosion.”

And if it’s hard to imagine that the New York metro area has much of an “environment” left to save, think again – even the Big Apple itself hosts a surprisingly rich assortment of habitats, Janet says. “Going out in the field is a lot of fun. One day you might be birding in Brooklyn at 6 a.m., or studying a wetland on Long Island the next.”

Caught in the Middle

Our environmental consciousness may have expanded since that first Earth Day back in 1970, but with it has come a red-wood-sized stack of rules and regulations. Founded in 1979, EEA helps clients navigate this swamp of impact statements and rare-species protections.

“People needed someone to help guide them through the process,” Janet explains. “So we work with private developers, conservationists and all levels of government. Any one of these might be our client on a given project, but all are depending on us for a thorough and accurate report.”



Wetlands are particularly worth saving because they’re home to so many species. They also help filter and clean our own water supply, and help prevent flooding and erosion.

Gentleman SAS'74

Mary Beth Gentleman doesn't tilt at windmills – she actually helps get them built, along with other new ideas that could bring cleaner power to the American consumer.

A partner at Foley Hoag in Boston, Mary Beth co-chairs the law firm's Energy Technology and Renewables Practice Group. Business is brisk as clients come in with dreams that just might make them the Apple or Google of the energy world – while making all our lives greener and less dependent on foreign oil.

"Here in New England we have a remarkable base of entrepreneurs," Mary Beth says. "Our firm helps them get started, find capital, get permits, patents and licensing. We've helped companies go from just an idea to actual production of their technology." That technology may range from a handful of wind turbines to new alternative fuels for conventional power plants.

"I help renewable energy facilities through the approval

process, presenting evidence on the visual or noise impacts that can be expected, as well as any impact on animal species such as birds or bats. If a community is going to host one of these plants, it wants to know that the developer has done as much as possible to minimize these factors."

Mary Beth also represents companies that build traditional power plants, fueled by natural gas and oil. "The demand for electricity is gaining at such a rapid clip," she warns, "that more energy facilities will be needed, even with increasing investments in energy efficiency.

"People enjoy their big-screen TVs, their computers and video games that are power-hungry and always on." So how do you reconcile a real concern about climate change with these consumer habits? "We need more advanced technologies that can decrease the carbon content of our lives."

(Continued on top of page 26)

At the center of all these competing interests, an EEA scientist might feel like the nail in a roomful of hammers.

"We sometimes end up looking like the bad guys," Janet admits. "But you can't be swayed to support one group or the other, and you can't take it personally when you're attacked. Our job is to go out, collect and present the facts. You'll be in the field or sitting down at a meeting, and someone will try to test you, find out your agenda. But you can't have an agenda."

Fish Stories

Janet's agenda in choosing CNR was a small and intimate biology department. "The teachers were so open to treating you like a colleague. It really was like graduate work at the undergraduate level."

High school at Bronx Science was where she first became fascinated with the great outdoors. "We spent half a year observing animals at the Bronx Zoo, and I chose the baboons. It opened up such a new world – I was just blown away to see the social structure they have."

At CNR and then in graduate school at Adelphi, Janet shifted her focus to fish – researching why the bluegill sunfish changes colors, or how the African cichlid establishes its territory. She even made two summertime Earthwatch expeditions to the Canary Islands, west of Africa. The mission: study tide-pool fish – just how do these little dudes reach open water and still manage to return and find their own home puddles? (Not only do they note topographic markers, Janet explains in wonder, but they also use celestial navigation and have their own internal compass, thanks to magnetite in the brain.)

The Canary Islands explorers were not exactly roughing it like cast members of *Lost* or *Survivor*, Janet admits. "We actually were staying in a nice resort town. But there was a lot of work. We had to catch, tag and track fish at all hours, depending on the tides."

Urban Mysteries

Janet has been with EEA since 1987, literally coming on board when the firm recruited nearby Adelphi students to go out and catch fish for its marine biology studies.

Soon joining full-time, she focused on ecological and biological assessments around the tri-state region – wetlands, fisheries, plants and wildlife. One major long-term assignment took her to the wilds of Staten Island, where a series of parcels was facing development for a big corporate park.

"We were there to define the wetlands and show the developers what needed to be saved. We'd be out there spreading out plans on the hood of abandoned cars."

"New York City Parks and Recreation was in on it, other governments, the environmental people, everyone had their finger in the pie. I went out with local botanists to tag rare trees for saving or transplanting, and we found a lot of species that are rare for this region – sweet bay magnolias, hybridized oaks, junberry bushes."

Another fascinating puzzle was posed by an abandoned and flooded airfield in Queens, near the Whitestone Expressway.

"You'd be walking down the runway and fish were swimming by, turtles, plants growing through the tarmac. We were looking at it so New York City could decide how to restore it, and we found rare and endangered coastal birds breeding and roosting there."

Now that she has children, Janet has cut back on this kind of field work and instead helps EEA with its computers, newsletters and business development. "Biologists always say a bad day in the field is better than a good day in the office," she laughs, "but right now I can't be on the road or out on Staten Island all day."

Janet met husband Nick Recchia at EEA, where he's now vice president of the firm as well as a senior hydrogeologist in the hazardous materials division. But with seven-year-old twin boys and a nine-year-old girl, she says they don't have much spare time to talk shop at home.

(Continued on bottom of page 26)



Gentleman

(Continued from page 25)

The "Holy Grail"

How will we quench our thirst for energy while hopefully cooling any global warming?

"The debate within the 'energy space' – that massive community of people who think about and act on energy issues, including scientists, environmentalists, government and indus-

try – is often that one resource is superior to all others," Mary Beth laments. "Some argue we should concentrate only on renewables, or only on gas-fired plants or so on.

"But my message is, let's take the best of all these concepts and pursue them all. Wind, solar, low-carbon biofuels, hydrogen, geothermal, fuel cells – the demand for electricity is so great right now and the consequences of climate change so dire, that we shouldn't reject any solution out of hand." Even nuclear power is getting a fresh look in some places because it gives off no greenhouse gases.

One long-touted solution is ethanol, increasingly being added to gasoline to reduce U.S. dependence on oil-based products. But because ethanol is made from corn, Mary Beth warns, "We may hike corn prices and cause damaging ripples through the agriculture industry."

That's why one company she works with is producing something called cellulosic ethanol, using waste plant materials that would otherwise be thrown out.

"The key is finding new processes to more effectively break down this stuff – that's the Holy Grail of ethanol production." If we ever find it, "that could revolutionize ethanol's use for many things, not just gasoline."

Another potential advance is gaining steam at a company called Masspower, which runs a conventional gas-fired plant now being licensed to burn biofuels instead of oil. Like ethanol, these fuels are made from grasses or other vegetative matter that would burn cleaner and reduce our dependence on foreign petroleum.

"This is so significant," Mary Beth continues, "because it would be the first U.S. plant to take this step." And because, if it works, "It would show how many standard General Electric turbine plants can easily be retooled to burn more cleanly and efficiently.

"If we could substitute biofuels for even 20 percent of the fuel these plants use, emissions would be greatly reduced and our energy security greatly enhanced."

Collura

(Continued from page 25)

Preserve and Protect

Despite the scientific impartiality needed on the job, Janet says that "on a personal level I consider myself a conservationist. I want to preserve and protect as much as possible." She especially urges development of alternative power sources to meet our growing energy crisis. "I would mandate," for example, "that every new house be built with solar roofs."

One reason she's hopeful for the future is that people are becoming more conscious of the world around them. "I remember watching *Wild Kingdom* while growing up," Janet says. "But now we've got entire networks we can

encourage our children to watch, like Animal Planet or Discovery Kids."

And if you're ready to do more than just watch, Janet urges getting involved with a volunteer group like the Audubon or Nature Conservancy, or local groups working to protect wild habitats. Also look for impromptu opportunities, like a local beach clean-up. "It's amazing how much you can learn in one day."

College courses and internships in the environmental sciences are becoming more relevant and specialized, Janet notes. "See what you can learn and find your niche, such as air quality, ecological science or hazardous materials.

There are so many avenues within the environmental field."

At EEA, Janet says, "I feel we are trying to work toward maintaining a balance and also toward educating people. We get clients who at first will say, 'I own this land, I should be able to do whatever I want.' You have to educate them.

"We also have clients who are so good on embracing environmental issues, saving trees, donating parkland. Someone like that is setting an important example, by showing you can protect valuable resources and still get the job done." ■

Wind, solar, low-carbon biofuels, hydrogen, geothermal, fuel cells – the demand for electricity is so great right now and the consequences of climate change so dire, that we shouldn't reject any solution out of hand.

Power Politics

Mary Beth is not only energy-conscious, she probably doesn't litter much either – her husband, Don Grant, is an enforcement specialist with the United States Environmental Protection Agency. They live in Lexington, MA, with teenage daughter Amanda.

Mary Beth's father was career Army, so when young she lived all over the country. Her mother, Nancy Toal Gentleman, a teacher, had gone to CNR, and so Mary Beth followed in those footsteps.

"My friends from CNR are going to just scream with laughter when they see I made it into a *Quarterly* issue on the sciences," Mary Beth says with glee. "Many of them were science majors, and they really looked down on me being in Poli Sci!"

But "politics was always my passion," she admits, and an internship with a Massachusetts state energy agency – required for her master's in business and public finance – "opened my eyes to how the energy sector is positioned so crucially at the intersection of government, science and economics."

Joining Massachusetts government full-time in the late 1970s, she focused on energy and conservation issues, adding a law degree before joining Foley Hoag in 1989. "In six years as the state's assistant secretary of energy, it became clear to me that the law was driving decision-making. In order to be effective as a policy-maker, I needed to become a lawyer."

Her work is so compelling, she says, because "Energy policy affects what we see, what we breathe and how much we pay. It affects us every day, where we live and where we work. And there rarely is just one clearly superior energy policy – there are tradeoffs, and these tradeoffs affect people in different ways."

Consumer interests may be protected by public utility boards and other watchdogs, "but what exactly is the best interest of the public? It's often seen as offering power at the

lowest possible cost, but will that kind of short-term decision-making be best in the long run?"

Paying the Price

Consumers as well as government must make wiser decisions to cut peak usage – something that won't happen unless consumers see the real costs in black and white, she argues.

She points out that currently consumers pay the same for a kilowatt hour regardless of when it's used – at peak level, 2 p.m. on a hot August day, or off-peak, say a spring evening – while in reality that peak kilowatt may cost 30 times as much. Yet that cost difference is not clearly communicated to the consumer.

Many politicians may be fearful, "but I think we have to move to this kind of system, with a complementary program in place for those with limited means and few options to reduce their use.

"When it comes to buying gasoline, the consumer gets a very clear signal of the cost – that big sign on the corner. But as electricity consumers we are not given these signals. Our response to higher gas prices shows that consumers can respond to these cues and learn to conserve energy."

But will consumers, business and government respond to opportunities for more renewable energy? Even small projects can make a difference, Mary Beth says – from wind turbines to photovoltaic panels that convert the sun's rays, or geothermal technology that taps natural heat from the Earth's crust.

"One big advantage of such renewables is that the operating cost can be very low once the technology is in place."

But the key, Mary Beth argues, "is that no one technology is the solution. The 'energy space' can seem very Balkanized at times, very divided. Together we need to pursue multiple technologies, and promote the contributions each can make." ■

MARY JANE

Perry SAS'69

What are frail? Spring blossoms and youth;

What are deep? The ocean and truth.

— Christina Rossetti

Marine scientist Mary Jane Perry's search for truth is complicated by the very nature of the ocean itself – not just vast but turbulent, eddying, constantly swirling and changing.

In fact, just the thought is making us a bit woozy. But rather than merely reach for more Dramamine, the University of Maine professor has helped pioneer the use of a new gadget that she says is "changing the face of oceanography."

Meet the Autonomous Underwater Vehicle, or AUV – in this case a small remote-controlled glider that can cruise the waters for up to months at a time as it sends vital data to researchers on comfy dry land. And unlike your SUV, it rarely

needs to pull up to the gas pump.

"I remember about five years ago I gave a talk on these gliders," Mary Jane says, "and the audience reaction at first was just, 'Nice toy.' But when I showed them the data it brought back, they really went, 'Wow!'"

Dutifully tracking variables such as water temperature, salinity and oxygen levels, these devices help Mary Jane feel like she's right out there floating with the phytoplankton – the single-celled organisms she studies because they are the essential ingredient for nearly all ocean life.

"I'm trying to understand the factors that drive the entire ocean food web. Phytoplankton produce the organic material that nearly everything else either eats directly, or relies upon indirectly.

"We know what storms do to the atmosphere, but the ocean experiences storms as well. How does the biology react
(Continued on page 28)

We don't know what the effects of climate change are going to be, because the responses of organisms and of the environment are non-linear. It's not like putting your foot on the accelerator and knowing exactly what the response is going to be.

Perry *(Continued from page 27)*

to this variability, to phenomena such as El Nino or the North Atlantic Oscillations? How do these changes ripple up and down the food chain? I've spent a lot of time studying how you can adequately sample these phenomena and more accurately make these measurements."

Finding Nemo

One of the early watershed moments in oceanography was the 1872 Challenger Expedition that circumnavigated the globe. But as Mary Jane points out, those hardy souls were able to visit a particular point only once, getting just a brief snapshot rather than the full picture.

"Imagine being told to observe New York City but only at noon, or only at midnight – you'd have very different views of what the city looks like. I'm looking at ways you can stay out there all the time, so you can accurately capture all the variability, then understand the norm, the changes and the long-term trends."

One answer is satellites, which can measure phytoplankton levels from on high because the organisms selectively absorb different wavelengths of light as they perform photosynthesis. Rich seas appear green, while bright blue waters, such as those off Hawaii, are low in phytoplankton.

But the latest wave is the AUV, like U. Maine's Nemo, nicknamed for the little fish in the Disney movie. It can cruise for a full month on battery power; in fact, other gliders Mary Jane works with can stay out for as long as nine months.

About the size and shape of a torpedo, these winged devices maneuver by adjusting their buoyancy, thanks to pumps that move oil and water in and out of various chambers. They can rise to the surface at pre-set intervals to transmit data or receive new instructions.

Buying one of these "nice toys" will set you back about \$100,000, but they are notably cost-effective to run. The priciest part of the operation is data transmission back to base, via an iridium phone that costs \$150 an hour when in use – so thankfully Nemo has not yet reached its teenage years.

"The key," Mary Jane says, "is that the data comes back in a continuous stream over weeks and months – so much better than going out on a ship that costs \$20,000 a day."

Better, even if like Mary Jane you happen to enjoy the thrill of holding on for dear life as your ship rocks back and forth and waves crash over the deck.

"I remember one hurricane that was threatening New England but then 'passed harmlessly out to sea,' as the weather reports termed it. Well, we were on an expedition just south of Iceland, and that 'harmlessly out to sea' gave us 80-mph winds. I was sitting on a crate with my arms wrapped around a post,



trying to read a book while the boat pitched and rolled."

Still, Mary Jane makes clear, scientists must go to sea to make the most complex observations, and she will be cruising toward Iceland once again next year. "But the ability to make the constant simple measurements by satellite and AUV is changing the face of oceanography. You get a deeper understanding of the ocean by combining all these methods."

Undoing the Web?

Climate change, of course, is one potential threat that experts across many fields are struggling to understand. While Mary Jane is "not working directly on that issue, I'm greatly concerned with anything that might change the ocean's temperature, acidity or circulation.

"We don't know what the effects of climate change are going to be, because the responses of organisms and of the environment are non-linear. It's not like putting your foot on the accelerator and knowing exactly what the response is going to be."

The ocean, Mary Jane explains, is a huge reservoir for heat and carbon dioxide, and the extra carbon dioxide we add by burning fossil fuels has already measurably lowered its pH level around the globe.

"Will we see changes in species? Changes in the abundance of organisms at the food web's base? Will some phytoplankton do better or worse? If we change the time of year that phytoplankton bloom, how would this affect the entire food web? And how do you adequately sample the ocean so you can document what really is happening?"

But along with future global-warming scenarios, oceanographers worry about other harm we're already causing. Human activity can create prime conditions for harmful invading species, spread of disease and destruction of coral reefs. Runoffs such as fertilizer can also send phytoplankton growth spiraling out of control, eventually creating oxygen-depleted "dead zones" where nothing but bacteria will survive.

"Parts of the Mississippi River delta have no oxygen – plants and fish can no longer come into them. These dead zones are also turning up in places like Long Island Sound and are doubling around the globe every ten years," posing a major threat to our own food chain.

And because Third World countries in particular are so dependent on seafood, Mary Jane warns, "All of these environmental factors spill over into social and political conditions, creating even more instability."

Swept Away

Mary Jane grew up in Queens, appropriately enough just a mile from Little Neck Bay. "Dad was an electrical engineer, and I think that's where I get my quantitative bent. On family vacations he'd always be looking for power plants to visit, and I was the only one who liked going along."

Biology and chemistry were two of her favorite high school courses, so she went to a series of Saturday science career days. "There were about 250 boys and only 10 girls," she recalls, adding that fortunately, times have changed. "An oceanographer brought in some equipment and gave a talk, and I just remember saying, 'This is for me.'"

Getting her BA at CNR, "I remember how Sr. Bonaventure would take us out on her boat to do projects on a small island she had gotten donated to the school." Mary Jane then earned

her doctorate at the University of California-San Diego's Scripps Institute of Oceanography and studied Pacific waters at the University of Washington for 25 years, before moving to U. Maine at Orono in 1999.

While still out west she collaborated on one of the earliest gliders, and worked with a private company to help design optical sensors for AUVs. "The sensors need to be small but very durable and reliable. We've managed to reduce their size from that of a champagne bottle to just a hockey puck."

For fun, Mary Jane likes kayaking, as well as dry-land hobbies such as cooking and gardening. She and husband Peter Jumars have one grown daughter. Peter is a fellow oceanographer – although his specialty is the ocean floor, while Mary Jane's phytoplankton research keeps her focused closer to the surface.

"I hope the legacy of my work will be a better understanding of how the oceans respond to a changing environment," and how to observe those responses, Mary Jane sums up. "If you take a cup of coffee and stir in some cream, you can see the swirls. But how do you measure the changes in an infinitely vaster cup of coffee like the ocean?" ■

JULIETTE

Cyr SAS'88

Court is now in session, Judge Juliette Cyr presiding.

Of course, Julie is not a real judge, and this is not the kind of trial you're going to see on Court TV or *Boston Legal*.

But human lives and vast sums of money are at stake – because this is a clinical drug trial for a new rheumatoid arthritis treatment. And Julie is managing the trial for Pfizer Inc. so a "jury" of medical experts and federal regulators can decide if the treatment is safe and effective.

"Running a clinical trial takes a lot of people in a lot of places," Julie explains, "and I coordinate everything – who will administer the treatment, who will receive the treatment and the writing of the protocol," which officially sets out the trial's goals and methodology. "Right now we have 483 patients in nearly a dozen countries, and my lab budget alone is close to \$7 million."

The Danbury, CT, resident has managed trials in both Phase I – designed to make sure a new drug is safe for use – and Phase II, a more complex look at whether the drug actually has some beneficial effects. "Does it do what it's supposed to do?"

After that, researchers meet with the federal Food and Drug Administration to determine if a Phase III study can proceed, looking at several thousand patients to fine-tune dosage and sniff out any potential long-term side effects. Finally, if all looks good, the drug is OK'd for widespread prescription use. It might even get FDA fast-tracking to market if the need is desperate enough.

At a smaller drug firm, a trial manager might be herding along as many as ten studies at a time. But at a giant such as Pfizer, a Phase II study like Julie's is so complex that for months or even years, "that one trial is going to be your life."

Pride and Pain

Julie speaks like a proud parent about new life-saving drugs she

As an industry we are so regulated and there are so many safeguards in place, and our trials bring in the top opinion-leaders from their area of expertise. So when a drug comes to market you can be confident it will do what it's supposed to do.

has helped trial-manage, such as Tipranavir, the AIDS treatment tested while she was at Boehringer Ingelheim in Danbury.

You might notice TV ads for another new drug she worked on, Spiriva, for chronic obstructive pulmonary disease (COPD). Facing European and Canadian environmental bans on fluorocarbons, Boehringer developed a new inhalant that not only used no such propellants but also delivered more of the drug right to patients' lungs.

But much-touted drugs can sometimes backfire as well, even after years of costly R&D. One Pfizer product created to raise good cholesterol levels reached Phase III before being pulled because of increased heart risk. "They had already invested \$800 million on it – money that they will never see again." Many other drugs never even make it to the human-testing stage, Julie adds.

And then there are cases such as Vioxx, the arthritis painkiller Merck withdrew from use in 2004 after it was linked to strokes and heart attacks, with lawsuits and headlines loudly charging a cover-up of negative test results.

"As an industry we are so regulated and there are so many
(Continued on page 30)

Cyr

(Continued from page 29)

safeguards in place, and our trials bring in the top opinion-leaders from their area of expertise. So when a drug comes to market,” Julie insists, “you can be confident it will do what it’s supposed to do.”

But as the *Wall Street Journal* reported last March, “the FDA track record on drug safety has faced harsh scrutiny” and its drive to better monitor dangerous side effects after drugs come to market has been hobbled by delays.

Bad Guy or Godsend?

Along with safety concerns, the drug industry is right up there with Big Oil in facing angry charges of “obscene profits.”

“I’m especially aware of these issues working for Pfizer,” Julie says, “because we’re the largest pharmaceutical company in the world. It’s a business like any other, and you have to make a profit to survive. But drug companies get to be the bad guy because most of the people who need these products are the elderly, people who tend to be on fixed incomes, with less coverage.

“I don’t know what the solution is. A lot of companies are trying to offer reduced-price programs for people at certain income levels.” Wal-Mart’s \$4 prescriptions are one example.

“It’s hard – I’ve been unemployed and without resources, and I know it can be very painful to pay for a drug you need. But I know how much it costs to put a drug on the market. I know what goes into it all, and we’re not as evil as the press makes us out to be.”

And certainly, for many, these products are a godsend.

“When I worked on Tipranivir, I got to see the whole history of the AIDS epidemic and the drugs we’ve used,” Julie points out. “We’ve made such great strides in the past ten years that it’s become a disease you can live with. With COPD the new drugs can actually reverse a lot of lung damage, if the patient will stop smoking.” And rheumatoid arthritis treatments are also making it easier for people to cope.

Much like stock trading, trial management can be a 24-hour job as clinical testing goes increasingly international in search of more patients. “It can be more of a challenge to get these sites up and running,” Julie says.

Even the time-zone gap can pose a problem. “I had one colleague suddenly go ‘Omigod!’ as she realized she had overslept a 5 a.m. teleconference from Korea. ‘You’ve got to sleep sometime,’ I told her.” Fortunately, once a project is up and running, Julie can handle a lot of her work from home, rather than on-site at Pfizer in New London, CT.

Locked and Blinded

“Science was always in my genes,” Julie says. “My mother had hoped to go into that kind of career, but as one of 10 kids on a Maine potato farm, the money for school just wasn’t there.”

After graduate study at UConn, Julie decided she wanted to work on the clinical side of drug research rather than with animals.

“I know animal testing has to be done but it just wasn’t my cup of tea,” explains the owner of two dogs and a female cat named Seamus. “I had already named her before I finally real-



ized she was a girl. And I’m a biology major, so go figure.”

Scientists are supposed to maintain a cool impartiality while conducting research, but isn’t it hard not to root for a new drug to pass with flying colors, spelling hope for those in need?

“The doctors on the front lines at our clinical sites do get excited when they see great results,” Julie replies. “It’s easier for me to remain neutral because I don’t deal directly with the patients.

“I deal only with the data, and it’s totally locked and blinded so you can’t infer anything until the end.” Most trials, in fact, are double-blind, meaning that neither patient nor doctor know who is actually getting the new drug under study.

Julie’s rheumatoid arthritis drug trial launched last January. Before a study can begin, a committee draws up precise guidelines on what kind of patients may be admitted and who must be excluded, based on the extent of their illness or other complicating conditions. Most crucially, Julie explains, they cannot be taking other drugs that might cloud the results or create a possibly dangerous interaction.

And that might be the toughest part of the job: telling someone desperate for hope that they cannot take part in a study, cannot roll the dice on a promising new drug that may not reach market until it’s too late for them.

“If you start getting a soft heart and take someone who does not fit the carefully constructed criteria,” Julie warns, “the entire study can go right into the garbage.” ■

Gary Rockfield is a freelance writer/editor who frequently reports on education and business-related issues, as well as unique personalities from all walks of life. An award-winning former newspaper editor, he lives in Brewster, NY.

NCAMPAIGN NEWS

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TOTAL RAISED TOWARD GOAL



Wellness Center Construction Continues on Schedule

December 2007 Completion Expected

Construction on the Wellness Center continues on schedule, with the expected completion of the project in December 2007. As the building truly takes shape, over 90 percent of the basic steel is now in place, and the concrete for both the first and second floors, the running track and the gymnasium floor have now been poured. The four key beams over the pool also have been formed and poured.

Outside of the building, a great deal of site work has been done, especially the grading and drainage work. With good weather ahead, construction should move rapidly forward towards the completion of the wonderful new building, the first new construction on the main campus in four decades.



Workers pour the concrete for gymnasium floor in early May.



Construction on the Wellness Center continues on schedule.



TO MAKE A GIFT TO THE CAMPAIGN OR FOR FURTHER INFORMATION, PLEASE VISIT THE WEBSITE AT WWW.CNR.EDU, CALL 1-800-474-4232 OR EMAIL CAMPAIGN@CNR.EDU.

Supporting The College of New Rochelle!

Pat McGinnis Dunn SAS'60
\$100,000

When I graduated from high school in Brooklyn, New York in January of 1956, I had to wait until the following fall before I could enroll in college. As a young woman, I knew I wanted to go away to school and to attend a women's college.

I considered schools such as Notre Dame in Maryland but then an aunt of mine, Mary Camper McGinnis, mentioned The College of New Rochelle. She had been a student at the College back in 1921-22 when she was only 14. A brilliant woman, a young genius really, she spent one year at CNR before continuing her college and graduate work in New York City. With her encouragement, I applied to CNR and was accepted and came here in September 1956.

I loved the College from the very first moments I was on campus. Some girls I think had trouble with the discipline, but it didn't seem to bother me and I just loved being here.

I majored in Speech/English, sang in Choir, was president of the Glee Club, swam in Swimphony, taught beginning swimmers for three years, broadcast from Fordham's radio station and did some backstage work for Props and Paint. It was a full and wonderful time in my life and I had a great time and got a terrific education. You don't forget a place with such good memories: great friends, beautiful surroundings (I spent a lot of time in our wonderful Art Deco Sports Building) and outstanding teachers, such as Dr. Allys Vergara, with whom I remained friends until her death.

After graduating, I was away from New Rochelle as I was raising my family. I had moved south, where in the early 1960s I became active in the civil rights movement, and the world beyond The College of New Rochelle.

But as time passed, I began returning for class reunions, where I renewed old friendships and associations. Over the years, I became so impressed and pleased with how CNR had changed with the times, adapted to the new realities and kept pace with a new world.

The Graduate School, the School of Nursing and especially the School of New Resources are wonderful additions since I was an undergraduate. They have made the College stronger and more dynamic. Many other women's colleges, as we know, have not been able to make these changes or reach out to embrace new populations of students and empower them by



Over the years, I became so impressed and pleased with how CNR had changed with the times, adapted to the new realities and kept pace with a new world.

providing the opportunity for advanced degrees. I am so proud of the College for what it has always done and for what it continues to do.

The Wellness Center is another example of this empowerment. It is a wonderful addition to the campus life and community. Having been a competitive swimmer for most of my life, I'm thrilled to learn that the Center will have an NCAA-regulation pool. Oh, to be young again!! But short of that, I am thrilled to be part of the Campaign to make the Wellness Center the first new building on our campus in 40 years. To me, that is quite an achievement.

TO MAKE A GIFT TO THE CAMPAIGN OR FOR FURTHER INFORMATION, PLEASE VISIT THE WEBSITE AT
WWW.CNR.EDU, CALL 1-800-474-4232 OR EMAIL CAMPAIGN@CNR.EDU.

Supporting The College of New Rochelle!

Sabina Sprague Slavin SAS'62
\$25,000 gift from Sabina and Walter Slavin

I don't remember how I first learned of The College of New Rochelle, but when I graduated from high school, it was CNR that I wanted to attend. I came to New Rochelle in 1958 and have been connected with the College ever since. I was a chemistry major in the School of Arts & Sciences and graduated in 1962.

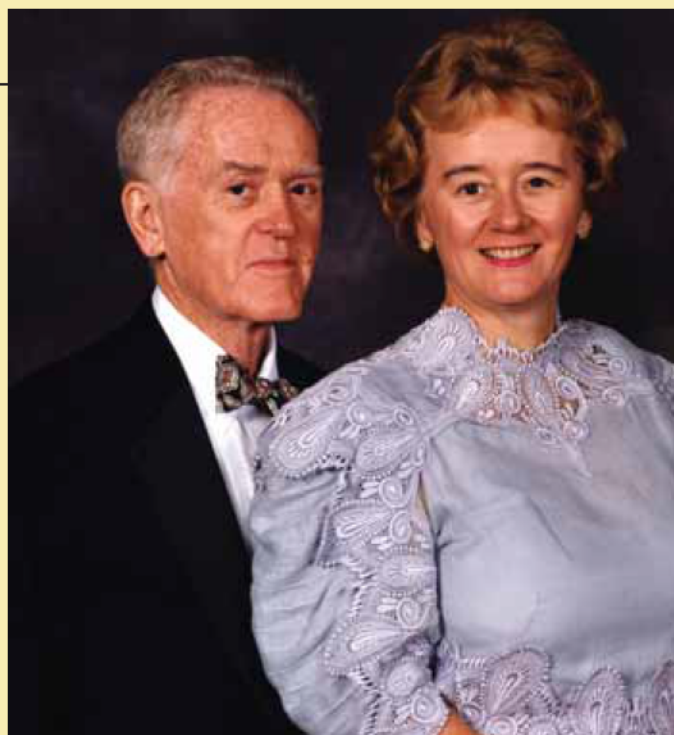
The Class of '62 was quite a class as undergraduates, and I think that the Ursulines worried about us, as we were always ready to party and not to study – but we did turn out all right after all these years. We certainly loved the College and keep coming back year after year for our reunions. I think we have at least 50 graduates of our class attend each reunion. I have been fortunate to return for each anniversary, and we are about to celebrate our 45th reunion.

I recall my college years on campus at CNR as being very busy. I was a member of the Science Club, of course, and also sang in the Choir. Some of my professors who were particularly important to me during these years were James McBride and Richard Cassetta.

Shortly after graduating I went to work for the Perkin-Elmer Corporation as an applications chemist and began my career in research, development and sales. It was at Perkin-Elmer that I met my husband, Walter Slavin, and we have had a very strong personal and professional partnership for more than 40 years. It has been an interesting and exciting professional time together and a wonderful married life.

And it has been very rewarding to see how the College has grown and developed over the years.

I am so impressed with how Sr. Dorothy Ann Kelly and the leadership of the College back in the 1970s understood how the needs of the higher education population were changing. She and her administration had the foresight to establish the School of New Resources, the Graduate School and the School of Nursing. They were visionary. As we all must move, change and adapt in life with the demands of families and our professional careers, institutions, too, need to adjust. CNR's ability to adapt to changes in higher education speaks to its 103 years of extraordinary service to students.



A healthy body is the foundation on which we grow and develop our minds, and when the new building opens later this year it will, I know, improve the lives of all CNR students. It is very gratifying for me and my husband to be part of such a worthwhile undertaking.

Whenever I return to campus, I am pleased to see what the Ursulines, Dr. Stephen Sweeny and the present administration have accomplished. The new Wellness Center is the most present example. The College realizes that education begins with a healthy body.

A healthy body is the foundation on which we grow and develop our minds, and when the new building opens later this year it will, I know, improve the lives of all CNR students. It is very gratifying for me and my husband to be part of such a worthwhile undertaking.

CNR and Local Middle School Launch Global Child Labor Curricula Project

Currently, there are 246 million child laborers worldwide. The majority (69.5%) work in hazardous situations or conditions, including forced and bonded labor, trafficking, armed conflict, prostitution and pornography.

Last fall, the College's School of Arts & Sciences launched a curriculum project focusing on the causes and consequences of global child labor. Spearheaded by Dr. Linda Swerdlow, Associate Professor of Education at CNR, and Tony Martino, social studies teacher at Isaac E. Young Middle School in New Rochelle, this collaborative project, to continue for five years, will be conducted with both CNR undergraduate students and students from the middle school.

"Our objectives with this project are to provide pre-service educators with an in-depth understanding of this important issue, familiarize them with available curriculum resources and have them use this knowledge to teach and inspire middle school students to work for social change," says Swerdlow. "We also plan to provide 8th grade students with an enrichment experience which gives them a deeper understanding of child labor around the world and motivates them to take action for social justice."

The partnership between CNR and Isaac Young began three years ago with a Vietnam Veterans' Oral History Project. Approximately 30 middle school and 10 CNR students participated in that nationally recognized project.

As part of the middle-level certification program at CNR, undergraduates take a course on Middle Level Education. The curriculum component of the course requires that CNR students develop and teach an interdisciplinary unit to small groups of students at Isaac Young as part of the Curricula Project. Teacher education candidates will also help the middle school students develop social action projects and activities, such as letter writing campaigns, fundraising activities and participation in existing youth action programs (Operation Day's Work, Free the Children, Net Aid, etc.).

Taking the Plunge

This January, a dozen students from the Schools of Arts & Sciences and Nursing, as well as several CNR staff members, spent a week performing community service for impoverished communities located on the U.S.-Mexico border. While there for the Plunge, coordinated by Campus Ministry, the group built a house – complete with a tin roof, storm windows and a cement floor – for a family of six and presented programs on asthma, heart disease, hypertension, obesity, nutrition, arthritis, dental care and diabetes.

According to Marie Serina, Director of Health Services at the College, who accompanied the students on the Plunge, "In screening the elderly residents of the Matamoros colonia, the students found 80 percent were hyper-

tensive, yet the clinic only had limited medication to address this – an ongoing problem."

During spring break, groups of students participated in plunges in both urban and rural settings. As part of the Urban Plunge four CNR students worked closely with professional educators at the Hale House Learning Center in Manhattan. The Learning Center serves children ages 6 weeks through 5 years, promoting intellectual, physical, social, emotional and language development. For the Rural Plunge, four CNR volunteers traveled to Naugatuck, West Virginia at the Big Laurel Learning Center, where they provided day-care and tutored students, as well as assisted with outdoor maintenance and environmental activities.



Above: Several members of the CNR group flank Don Augustin and his daughter-in-law Adela (second from right) in front of the house built for them. Pictured from CNR are Tiffani Blake SAS'03, Gabrielle Carrasquillo SN'08, Ruth Collura SN'08, Tegan Nguyen SAS'08, Blanca Paccha SAS'08, Bethany Bellino SN'07 and Nikia Burt SAS'07. Right: Ruth Collura SN'08 works on the house.





CNR Choir Performs at St. Patrick's

The CNR Gospel Choir, under the direction of Roger Francis, sang at St. Patrick's Cathedral during a Mass sponsored by the Office of Black Ministry of the New York Archdiocese in February 2007. The Mass was in celebration of Black History Month.

Best-selling Author Speaks at Dowell Lecture

Amy Hill Hearth, *New York Times* best-selling author of the oral history story, *Having Our Say: The Delany Sisters' First 100 Years* (pictured right), spoke to students, faculty, staff and members of the community in March, as part of the College's Women's History Month events. Delivering this year's Dowell Lecture, Ms. Hearth is also the author of *Strong Medicine: The Life and Times of Marion 'Strong Medicine' Gould, Native American Elder and Mother of a Chief* and *In a World Gone Mad: A Heroic Story of Love, Faith and Survival* that tells the true story of a young Jewish couple who escaped the Holocaust in Poland by posing as Catholics and working for the Underground, as well as other books.



Ms. Hearth became known nationally in 1991 as the reporter who "broke the story" about the Delany Sisters, a reclusive and then-unknown pair of centenarian sisters who were the daughters of a man born into slavery. In a feature article for *The New York Times*, Ms. Hearth captured the sisters' voices, personalities and unvarnished opinions. *Having Our Say* became a runaway bestseller after its publication in 1993.

Following the lecture, Ms. Hearth signed books for students and spoke informally with students and faculty at a reception in the Mooney Center Lounge.

Racing on a Broken Road Shown at Castle Gallery



Exhibit curator Betsy Braun Lane (right) discusses the exhibit with a visitor during the opening reception.

This winter, the Castle Gallery played host to "Racing on a Broken Road," an exhibit of artwork and researched material that uncovered the story of 12 generations of free and enslaved people who lived in the historic Cortlandt/Peekskill region of the Hudson Valley for 250 years, celebrating their contributions as patriots and citizens and recognizing their challenges and victories.

Organized by Betsy Braun Lane, the exhibit featured photographs and mixed media artworks that were inspired by the artist's conversations with people descended from some of the earliest African-American settlers in this region and others interested in preserving the local history of the mid-Hudson area. Collectively, the artworks addressed the legacy of slavery in the area, the desire for freedom as told in Underground Railroad narratives and the contradictory movements of our society toward guaranteeing political and personal liberties.

"The title of this exhibition is meant to call attention to the urgency as well as the overwhelming difficulty that has been encountered repeatedly by people of African-American descent in their relentless pursuit of personal and political liberties," said Braun Lane.

New Senior Vice President for Academic Affairs Named

Dr. Dorothy Escribano has been named as the College's new Senior Vice President for Academic Affairs, effective July 1, 2007. As the chief academic officer of the College, Escribano will supervise the operations of the College's four schools, the library and various academic support services. She will report directly to the president as a member of the Executive Team. She succeeds Dr. Joan Bailey, who has held the position since 1997.

"Dr. Escribano will bring to us her experience of more than 20 years of service in higher education," said CNR President Dr. Stephen Sweeny. "Her enthusiasm for women's education, in support of our Catholic heritage, for the primacy of the liberal arts and sciences and for our commitment to building community from diversity will position her well to promote our mission in her responsibilities in this key institutional position."

Coming to CNR from Worcester State College, Worcester, MA, Escribano served as interim Vice President for Academic Affairs and tenured member of the Languages and Literature Department. She had been the College's Associate Vice President for Academic Affairs since 2002 and held an American Council on Education (ACE) Fellowship for Administrative Leadership at the University of Rhode Island, under the mentorship of the President, in the academic year 2004-05.

She holds a BA in Spanish from Marist College, an MA in Liberal Studies (concentration in Special Education) from SUNY Stony Brook, and an MA in Spanish Literature from the University of Rhode Island. Escribano earned her Ph.D. in Hispanic Studies from Brown University.



CNR Drama Presents Staged Reading of Greek Tragedy Antigone

Moroccan native and SAS freshman Sakina Laksimi was Antigone in CNR Drama's production of the Sophocles' classic Greek tragedy in April. For the staged reading, director Laurie Peterson Castaldo chose Jean Anouilh's interpretation.

"The issues addressed in Anouilh's interpretation – the struggle between individual conscience and political authority, the differences between female and male sensibilities and the nature of human suffering – are as relevant in contemporary society as they were in ancient Greece," says Peterson Castaldo.

Following the reading, a colloquium, "Speaking Truth to Power: Antigone in the 21st Century," moderated by CNR Associate Professor of Political Science Dr. Daniel McCarthy, was presented. CNR faculty panelists included Professor of Classics Dr. Ann Raia, Assistant Professor of Philosophy Dr. Jennifer Scuro and Associate Professor of English Dr. Nick Smart.

CNR & ESPN PARTNER TO FIGHT CHILDHOOD OBESITY

CNR and Team ESPN have partnered in the fight against childhood obesity through ESPN Play Your Way, a youth physical fitness initiative designed to encourage children, ages 7-12, to become physically active.

"The percentage of children who are overweight has more than tripled in the past 20 years," says CNR Director of Intercollegiate Athletics Harold Crocker. "At CNR, we are committed to promoting healthy lifestyles through our wellness programs. Our partnership with ESPN is just one example of that commitment." The College will open its new \$28 million state-of-the-art Wellness Center during the academic year 2007-08. The 55,000-square-foot Wellness Center will house a gymnasium, basketball and volleyball courts, interior running track, six-lane NCAA competition swimming pool and a holistic meditation room.

In April CNR hosted an ESPN Play Your Way training workshop to teach adults and college students how to inspire children to be physically active by teaching them to create their own games and activities with traditional and non-traditional materials. Workshop attendees received start-up guides and complimentary ESPN play materials, including sign up sheets, game trackers, posters and certificates of achievement.

Team ESPN, the corporate outreach program for ESPN, Inc., introduces multi-faceted outreach programs designed to make a difference in communities. ESPN Play Your Way is one of the initiatives developed in conjunction with Disney Worldwide Outreach.

WHILE WE BUILD

... please give your support
to the Annual Fund.



It is exciting to walk down Liberty Avenue and see forms being set in place, concrete poured and a new building – the Wellness Center – emerging! But let's not forget that all of our students on all six campuses continue to need funds for scholarships and financial aid, special support in an emergency situation and dedicated and talented faculty in the classroom.

To be there for our students, we ask you to make a first time gift to CNR's Annual Fund or to consider increasing your support if you are already a donor.

Our students will thank you for the gift of education!

Annual Fund Donor Recognition

Special membership recognition is granted in the College's *Annual Report* to donors making an Annual Fund gift at one of the donor club levels noted at left. Corporate matching gifts are included in the donor's gift total. Members of The President's Circle receive other forms of recognition as well.

The President's Circle

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Ursuline Heritage Society	\$10,000+
Distinguished Member	\$5,000+
Castle Associates	\$3,000+
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Member	\$1,000+

President's Circle Associate Member*

1-4 years	\$250+
5-9 years	\$500+

**for recent graduates only*

Founder's Society	\$500+
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Campus Profile: JOHN CARDINAL O'CONNOR CAMPUS SOUTH BRONX

From humble beginnings in 1976, the South Bronx Campus of the School of New Resources was bound for bigger and better things. Offering college courses to the South Bronx community, the College first rented space in the basement of St. Augustine Roman Catholic Church. But that was only the start. Two years later, the program expanded to two floors of the Immaculate Conception School and earned the designation as a full branch campus from the Board of Regents. In 1991, with the campus continuing to flourish, it moved to four floors at 332 East 149th Street. Today, 30 years since its founding, the campus occupies all nine stories of the building, which the College purchased in 1997.

In January 2000 College leaders chose to recognize Archbishop of New York John Cardinal O'Connor's long commitment to advancing social justice by naming the campus in his honor.

More than 1,200 students pursue their college degrees at the John Cardinal O'Connor Campus, making it one of the School of New Resources largest campuses. Among the special features of the campus is the Gordon A. Parks Gallery, named to honor the famed artist, photographer, writer and

filmmaker, which houses both CNR's permanent collection of Parks' works and hosts other art exhibits presented during the year.

To learn more about the John Cardinal O'Connor Campus and its students, we asked Campus Director Dr. Joseph King. Here is his reply:

"It is fitting that a campus that boasts both the service legacy of John Cardinal O'Connor and the creative legacy of Gordon Parks provides a learning environment which caters to the many unique needs of adult learners in the South Bronx.

"Students view the program at JOC as a lever to upward mobility in our society. Often times, students have said, 'JOC provides another opportunity for us to become a somebody in society.' Indeed, a significant number of our students move on to advanced degrees in the educational and the professional fields. Other students have taken up leadership roles in the South Bronx as pastors, teachers, politicians and social workers, etc.

"In time, we have also witnessed commendable growth and personal development among JOC students. They tend to exhibit a greater sense of duty and responsibility, e.g. meeting deadlines and going the extra mile to achieve success. Additionally, many students exhibit steadfastness of character



and initiatives previously unseen.

"During the past decade there has been a decrease in the average age of the student body. This leads us to the belief that current JOC students have come to view education through a more purposeful and meaningful lens. At JOC students develop a greater awareness of the true value of the liberal arts degree.

"Each year, JOC students join the students of the other five campuses of New Resources to celebrate, at Commencement exercises, the conferment of their degrees. Their names are added to the swelling number of more than 15,000 adults who have received their liberal arts degree from The College of New Rochelle School of New Resources. And although each campus is unique and has special qualities particular to it, the rich heritage of both John Cardinal O'Connor and Gordon A. Parks is deeply embedded in the life and the souls of the JOC graduates."



SNR Introduces Video-Streamed Courses to Great Success

A hallmark of the School of New Resources has always been bringing educational opportunities into the communities where adults live and work. Now, they have gone one step further – right into the homes of students – with the introduction of video-streamed courses, and the response has been tremendous.

“This is our second semester of video-streamed courses at SNR,” explains Dr. Louis DeSalle, Associate Dean of Curriculum and Instruction for the School, “but we actually started our ‘telecourses’ several years ago, using videotapes that were kept on the campuses. Students then needed to go to the library and take out the tape and view it while on campus. With the new technology, students can study whenever they want, and wherever they want. It makes the School of New Resources a 24/7 campus.”

This spring 175 students registered for seven video-streamed courses – a 100 percent increase from the fall 2006 semester when the courses were introduced. And the demand is only expected to grow.

“Students in the School of New Resources often have full-time jobs and families, and the flexibility and convenience of video-streaming means the College and the classroom are as close as their own home computer,” says Emory Craig, Director of Academic Computing at CNR. “It also provides an excellent example of how the College is utilizing technology to enhance students’ learning experience.”

Working with their professors in an independent-study format, SNR students enrolled in the courses – which range in subject from “American Cinema” to “Portrait of a Family” to “Growing Old in a New Age” – receive three credits for academic work that is accomplished primarily through viewing 15-24 videos on their home computers, or wherever they have Internet access, and then completing assignments and writing papers on the videos. Students also meet periodically on campus with their professors.

Because video-streaming operates through ANGEL (a learning management software system the College utilizes extensively), students also can interact on-line on an ongoing basis with their professor, including participating in on-line discussions and submitting on-line assignments.

While the strength of CNR will always be the close, face-to-face intellectual exchanges between faculty and students, the introduction of courses like video-streaming opens a window to a wider academic world and brings those experiences and opportunities into the classroom on campus.

WOMEN’S HISTORY EVENT AT ROSA PARKS CAMPUS

Women’s history was celebrated in March 2007 at the Rosa Parks Campus with a program of readings by adjunct professors Marco Navarro, John Dodd and Mitchell Jackson and Joseph Sabado, a member of Instructional Staff at Rosa Parks. During the event, attended by nearly 100 students and hosted by Rosa Parks Campus Director Dr. Barbara Adams, the faculty members read from their own works, published and not yet published, as well as from the works of other authors. The readings focused on women as mothers, lovers and other females of importance to the authors, as well as the emotions involved in their relationships, such as the life and then death of one’s mother, the feeling of comfort in a mother’s kitchen and looking in-depth at an evolving and erotic relationship with a young woman.

Annual Book Talk Draws Crowds to JOC Campus

The School of New Resources’ Annual Book Talk drew an overflowing crowd of students, staff and guests to the Gordon Parks Gallery at the John Cardinal O’Connor Campus in March 2007. In fact, more than 100 attended, including students from the Brooklyn, Co-op City, New Rochelle, DC-37 and Rosa Parks campuses.

The program, emceed by Dr. Elena Bront de Avila, Director of the New Rochelle Campus, featured two adjunct professors from the School of New Resources – David Goewey, who teaches at both the Co-op City and Brooklyn campuses, and Dr. Emmanuel N.A. Tetteh, from the DC-37 Campus.

David Goewey, author of *Crash Out: The True Tale of a Hell’s Kitchen Kid and the Bloodiest Escape in Sing Sing History*, was born and raised in Ossining, home of Sing Sing Prison. As a child, he often heard the tales surrounding the infamous Easter Sunday 1941 breakout from the prison. Yet Goewey, born into a family of prison guards, still felt compelled to go beyond hearsay and meticulously researched and recorded every bit of information he could find on both Sing Sing and the breakout. The result is a story that is both beautiful and gripping.

In his book, *Theories of Democratic Governance in the Institutions of Higher Learning*, Dr. Tetteh investigates the notion that if a democracy is to succeed, the citizens must be taught the skills necessary for living in such a society as a means of making social changes. An ordained minister, Tetteh recently received his Ph.D. from Walden University in Public Policy and Administration in the School of Management.

After reading from their works, both men answered questions from the audience. A reception and book signing followed.

– Judith Balfe

STUDENT PROFILE



Blanca Paccha
SAS'08

THOUGH BLANCA IS SMALL IN STATURE, HER SMILE IS BIG ENOUGH TO FILL THE ROOM. Lively, motivated and energetic, at 21, this biology major in the School of Arts & Sciences has big plans for the future and it appears that through a lot of hard work, she has laid a strong foundation to make those plans a reality.

Though she has a strong interest in general science, her first love is research. And this summer Blanca will do just that when she interns with the National Institutes of Health in Washington D.C. One of just 15 students accepted into the Undergraduate Scholarship Program, she first learned of the opportunity from some of her professors at the College.

"It's for ten weeks, and we'll be paid," she says. "And, I'll be gaining great experience!" This opportunity is a monumental event in her life – just one of a series over the last several years that

Blanca has taken in stride.

Born in the mountains of Ecuador, Blanca moved with her family to the United States in 1999, not speaking a word of English. Five years later, by then fluent in English, she graduated from Norwalk High School in Connecticut as a member of the National Honors Society. The youngest of five children, she is the first in her family to attend college. It was alumna Eileen Gallagher Harrington SAS'62 who first encouraged Blanca to consider CNR and Blanca is especially glad she did.

"We fell in love with CNR," she says. "It was an all-girls school, Catholic and not too far from Norwalk. It also had an excellent science program, and I always knew that was what I wanted to do." Though her parents were still wary, after Blanca got settled in and they visited, they felt more confident and trusting.

"It was a great achievement for me," she says. "Leaving home was very hard, and my parents had been very strict." Blanca goes home about every two weeks. "Being away at college has made me appreciate my family and my culture more. It has also made me more aware of the world around me."

And Blanca has already begun exploring that world through her participation in CNR's plunges – a Rural Plunge in West Virginia in 2005 and an International Plunge in Matamoros, Mexico in 2006. During the plunges, held during academic breaks, students spend a week performing community service.

"The experiences were totally different," she says, "because the Rural Plunge was more environmentally-centered, while the International Plunge was more 'people'-centered." When speaking of her most recent experience on the U.S.-Mexico border, Blanca is visibly moved.

"We had a common language, but

there is so much poverty," she says. "Seeing the children was heartbreaking; there's so much they don't have. I felt so sorry for them. And I realized how much I had gotten used to living in America."

In addition to making a difference to others outside CNR, Blanca is also very active in the CNR Community. She was one of the first students to participate in the Faculty-Research Scholarship Program sponsored by the School of Arts & Sciences when it was introduced in 2004, working on a project to study eugenics with Dr. Lynn Petrullo, Professor of Biology. She also participates on both the tennis and cross country teams, belongs to LAWS (Latin American Women's Society) and SAMS (Science and Math Society) and works on campus in the College Relations Department. Since she likes to keep busy, Blanca also works during the summer and on breaks at the Norwalk Public Library, a job she began in high school, and is especially proud to have been promoted from page to clerical librarian.

In her spare time, Blanca, ever curious, loves to go to New York City and tries to experience a new place each time she visits. She has a great love of the City's museums, especially the Met, and hopes soon to visit the Folk Art Museum. She also enjoys taking long walks through the parks. And she loves to dance!

As for her future, though she is not sure where marriage and family will fit in, she knows that she wants to travel and plans to get an advanced degree so that she can fulfill her ambitions to work with people and to do research in infectious diseases.

One thing is certain. With her intelligence, curiosity and ever present smile, Blanca will be an accomplished and lifelong asset to her alma mater.

– Judith Balfe

STUDENT PROFILE



Megan Skrip SAS'07

A LOVE OF ANIMALS, SCIENCE AND GARDENING LED SAS SENIOR MEGAN SKRIP TO THE COLLEGE OF NEW ROCHELLE, where her interests coupled with a passion for learning formed a solid foundation for her future – a future she hopes will include full-time scientific research.

Megan's love of science started early. Growing up in the rural town of Oxford, MA, population 14,000, the then high school student nurtured her interest in the environment by volunteering as a field assistant for a Department of the Interior migratory bird survey and by designing and writing copy for a trail brochure produced by the Army Corps of Engineers.

Coming from a small town, Megan and her sister Betsy, a 2006 graduate of CNR, felt that a small women's college would be the best choice for them. And CNR offered the opportunity for Megan to work on both the scientific and environmental projects.

"CNR was noted for its science pro-

gram," she says. "The entire faculty is dedicated and willing to help the students. Dr. Faith Kostel-Hughes was absolutely wonderful."

And while at CNR, Megan, an Environmental Studies/Biology major and a member of the Honors Program, has had ample opportunity for scientific research. She has researched the effects of exotic earthworms on the forest ecosystems in Westchester County with Dr. Kostel-Hughes. And she has interned on a research project at the Institute of Eco Systems, in which she was involved in an assessment of the Hudson River from start to finish. "We banded birds, worked with zebra mussels, insects, fish, earthworms and small animals. It was great."

Then in 2006, Megan was awarded an even greater opportunity when she was one of the first students to receive a Greater Research Opportunities Student Fellowship from the Environmental Protection Agency. Last summer she interned with the EPA in Edison, NJ. Working as part of the EPA's bioassessment program, Megan assisted with stream and lake monitoring, specifically sampling benthic macroinvertebrate and fish assemblages to gauge the quality of New Jersey waters. The experience, says Megan, has "significantly broadened my knowledge base and capacity for fieldwork and provided me with a new repertoire of skills," including becoming more adept at invertebrate and fish taxonomy, calibrating and operating field equipment and data collection techniques. As a result she says, "I now have a better, and more personal, appreciation of watersheds and the effects of development on them."

On campus, Megan is also involved in WILDE (Women in Lasting Defense of the Environment), serving as president for two years and currently as secretary, and is a member of SAMS (Science and Math Society) and a lecturer at Holy Family Chapel.

And Megan has now become an international traveler in pursuit of her interest in the environment. Two years ago, she traveled to Taiwan with CNR Director of Campus Ministry Helen Wolf and a fellow student as part of the International Students Symposium. While there, they toured the countryside, gave presentations and sat on panels on culture and the environment.

When time allows, she loves to draw, enjoys music, especially pop and rock, and does cartooning and journal writing. Megan says she inherited a love of reading from her mother and credits both her parents with the success she and her sister have achieved, noting how proud her parents are of both daughters.

After commencement this May, Megan looks forward to continuing her education. She has been accepted at SUNY Syracuse, where she will carry a double major in Biology/Environment with a minor in chemistry. She hopes to earn an MS in ecology and then pursue a Ph.D. This summer Megan will be part of SUNY ESF, which runs a research program at the Adirondack Ecological Center, where she will be doing research and field work.

Long term, Megan has many goals, including being a full-time researcher and possibly writing for journals, as well as traveling to the Amazon, the desert and the plains. She also hopes to travel to France, so she can put to use three years of high school French, and to Australia to study its wildlife.

Sounds ambitious, but Megan is all that and more. Recently deciding to get her drivers license, she learned to drive, studied the manual and got her license, all in the space of one week. So one gets the feeling that whatever Megan sets her mind to achieving, she does. And if her success at CNR is any indication, then there is much more of the same ahead for Megan Skrip.

– Judith Balfe



Throughout the trip, the Japanese the group encountered, including these school children, flashed the symbol of peace.

BY KRISTIN BERMAN, PH.D.
ASSISTANT PROFESSOR OF EDUCATION,
GRADUATE SCHOOL

Thus began my journal after our last stop on a two-week tour of Japan for 11 college professors last November, sponsored by the Japan Society of New York and funded by the Freeman Foundation. I had the good fortune of being nominated to apply for this honor two years ago. After a lengthy application process, I was thrilled to receive the letter of acceptance from the director of the education department, Dr. Robert Fish, one of our country's outstanding experts of Japanese culture and history, who was to be our official guide and translator. He would lead our entourage of 11 professors of education from sev-

Memoirs of a Teacher in Japan

A petite woman with wispy, short black hair looking younger than her 74 years, Mioko bowed deeply as we entered the room for her presentation. As she smiled warmly, her eyes squinted closed behind her glasses. I was soon to learn that this was the result of 12 surgeries performed to repair her eyelids that had been burned off in the blast of the bomb in Hiroshima more than 60 years before. But her smooth, snow white face and soft, lilting voice emanated a peace that signaled strength grown from adversity. And peace was her message.

eral colleges, including the University of Michigan, Teachers College, CUNY and Iona, and hailing from numerous nations, such as Hungary, China, Kenya, Mexico and Israel. The group also included many disciplines within education, with me representing the "generalist" role through my position teaching multicultural perspectives in social studies methods, foundations of education and arts integration in the childhood education program in the CNR Graduate School. Readings and our pre-trip orientation introduced us to the history and customs of Japan, structure of Japanese education and

basic phrases in Japanese, as we ourselves became students who would later use this experience to make a difference in our own practice and the education of our students. *Ari-gato go-sai-mas!*

A non-profit, non-political private organization, Japan Society of New York was founded in 1907 to foster cultural understanding and educational exchanges between Japan and the United States. Though the doors closed in 1941 with the bombing of Pearl Harbor, the strong cultural ties remained, and in 1952 with the end of the American occupation of Japan, the society reopened with the help of John D. Rockefeller III.

Even though I have traveled to many parts of the world, my perception of Japanese education conformed to the stereotypical “perfect” system to which the U.S. system has been compared since the 1994 TIMSS (Third International Math and Science Study) in which U.S. scores were dwarfed by Japan, Germany and the Netherlands. Since then, discussion has focused on the rigor of Japanese education, as well as justifications for why our heterogeneous system cannot be compared to that of the homogeneous culture of Japan, whose traditions and pervasive value for education have contributed to high achievement.

A national curriculum mandated by the government provides a uniform structure for schools prescribing not only academic content, but also such areas as “integrated studies” and “moral education.” However, many schools struggle with how to implement these concepts, and often the designated time is used for review of class lessons or cramming for high stakes tests. This raises the question of balance as some parents and educators are concerned about too much pressure and lack of leisure time for their children. Japan also faces the challenges of a quickly growing, affluent society struggling with changes in the youth culture, resulting in unprecedented behavioral issues extending to delinquency and youth suicide. Special education has traditionally only served children with severe disabilities, and only recently conditions such as dyslexia and ADHD are being recognized and explored. Gifted education virtually does not exist. Cross-cultural communication will benefit both the U.S. and Japan to find new ways to deal with many common concerns. Our trip offered an opportunity for dialogue and cross-cultural study between academes from both countries.

So, what impressed me the most...

- Playful children in relaxed school atmospheres, cleaning their own schools, serving lunch to one another and participating in after school clubs that promote traditional arts such as calligraphy, kendo and tea ceremonies;
- The aesthetics, cleanliness and attention to detail in settings from the subway stations to the high-rises;
- The universal use of the two-finger peace symbol as a greeting by everyone from school children to cab drivers;
- The amazing resilience of a country of proud traditions that has gone through immense changes in a short time and has become one of the greatest countries in the world;
- Hiroshima and Mioko’s moving presentation that touched us with her personal account of a ghastly event only learned

here from textbooks, as well as her mission to spread the message of peace to prevent such horror from ever happening again;

- And most of all, the graciousness of everyone we met, and their warmth on a personal level, including a young policeman who, after giving us hand signal directions, followed us for three blocks to prevent us from getting lost.

So how will this inform my teaching? Japan and the United States face many of the same social and educational issues and have much to learn from each other. Rather than comparing and competing with nations on the rise, we need to find ways



Mioko, a 74-year-old survivor of the Hiroshima bomb, speaks about the experience.

Cross-cultural communication will benefit both the U.S. and Japan to find new ways to deal with many common concerns. Our trip offered an opportunity for dialogue and cross-cultural study between academes from both countries.

to communicate and learn from one another, to develop cross-cultural communication and mutual problem solving. We cannot teach the children who will be making major decisions and solving future problems with an insular mentality and distorted perception of what we mean by “rigor.” My experience in Japan only reinforced these convictions to bring tomorrow’s teachers to this awareness as well. And then Mioko’s experience will gain meaning in helping all to promote peace through greater understanding and compassion through true human connection.

Alumnae/i Association Candidates Announced

The following slate of officers, directors and nominating committee members is presented for election. We are deeply indebted to members of the Nominating Committee for their earnest effort to formulate a slate that truly represents our alumnae/i body. Your endorsement on the tear-out ballot acknowledges these alumnae/i as your representatives.

OFFICERS

Officers are elected for a term of two years.

President

Marlene Melone Tuter SAS'71
New Rochelle, NY
Early Childhood Educator
Jewish Community Center of Mid-Westchester

Vice President

Judith Balfe SNR'89, GS'91 & '97
New Rochelle, NY
Director of Marketing and Recruitment
School of New Resources
The College of New Rochelle

2nd Vice President for Programs

Brigidanne Flynn SAS'87
Newburgh, NY
Documentation Specialist
Wyeth Pharmaceuticals

Corresponding Secretary

Lela Keough Negri '56
Rye, NY
Consultant
Retired Manager of Business Planning
IBM

DIRECTORS

Annually, eight Directors are elected for a term of three years.

Carlye Spataro Calo SAS'96

Norwalk, CT
Homemaker

Rosa Puleo Napoleone SAS'75

Valhalla, NY
Vice President
New York Life Insurance Company

Virginia Shuford-Brown SAS'72

New Rochelle, NY
Program Specialist
Metro New York Development Disabilities
Services Office

Pearl Hayes Sullivan SNR'03

Bronx, NY
Coordinator of Retention
School of New Resources
The College of New Rochelle

NOMINATING COMMITTEE

Each year, three Nominating Committee members are elected to a term of two years.

Noel Petri Robinson SAS'69

Morristown, NJ
English Professor
County College of Morris

Nicole Totans SAS'99

Pelham Manor, NY
Media Manager, Institutional Advancement
Iona Preparatory School

Suzette Walker-Vega SAS'00

Waterbury, CT
Assistant Director, Campus Ministry
The College of New Rochelle

CONTINUING REPRESENTATIVES

Current representatives are:

Directors

Term expires June 30, 2008
Patricia Bennett SN'98
Sarah Bixler SAS'03
Martha Counihan SAS'67
Nancy Harkins SAS'75
Barbara Krajewski SN'98
Eileen Songer McCarthy SAS'91
Jane Scully Reichle SAS'67
Robin Zaleski SAS'89

Term expires June 30, 2009

Delphine Hill-Smith SNR'98
Susan Ball Larson SAS'65
Marilyn Dempsey McGill SAS'68
Marge O'Connor SAS'66
David Patterson SNR'97
Melvyn Romero SNR'03
Rodney Samuels SNR'95

NOMINATING COMMITTEE

Term expires June 30, 2008
Tara Nicole Alfano SAS'02, GS'04
Sandra Bartik SAS'67
Christiane Smith Morejon SNR'02

The Office of Alumnae/i Relations is eager to receive names of nominees for positions on the Board of Directors throughout the year. Please write, call 914-654-5240, or email alum@cnr.edu at any time.

To endorse the nominated slate, please complete and return the tear-out ballot in this issue of *Quarterly*.

We Remember...

Dr. Ruth Johnson

Bringing with her a deep commitment to education, Ruth Johnson, who passed away on March 3, 2007, after a long battle with cancer, joined the CNR Community in 1979 as Assistant Professor in the School of Nursing. In 1984 she assumed the duties of Acting Assistant Dean for the School and was appointed Assistant Dean the following year. With a strong belief in the importance of helping students find strong role models, Ruth was instrumental in developing the mentoring program in the School of Nursing. She left the College in 1989 to take a position with the National League for Nursing, only to return to serve CNR once again in 1994, but this time as Campus Director of the Co-op City Campus of the School of New Resources. For four years, the SNR students in Co-op City were the beneficiaries of her many talents and gifts, before Ruth left the College, this time for the last time, to return to her first love, the discipline of nursing education. Remembered by her colleagues as a warm and knowledgeable educator who always acknowledged and appreciated each and every one of her students and her colleagues, and as a gentle and kind woman with a beautiful smile and a wonderful laugh, she will be greatly missed.



Dr. Ronald Pollack

For nearly three decades, Ron Pollack, who died on March 1, 2007, after an extended illness, was an extraordinary member of the CNR Community, and the College is so much stronger for his dedicated service. Ron first came to CNR in 1978 as Assistant Dean for Administration in the School of New Resources, and two years later was promoted to Director of Financial Aid, a position he held until his retirement in 2005. Ron was a tireless advocate for the College's students. Amidst the complexities and myriad of federal and state regulations, Ron created a financial aid model that awarded millions of dollars in financial aid to thousands of students, enabling them to pursue their dreams of education. Ron Pollack believed deeply in the College's mission, and it was a tremendous comfort to the CNR Community to have the benefit of his vast expertise at the helm of such a critical area for a quarter century. Now at his passing, the CNR Community in turn offers solace to his wife and family and joins them in mourning Ron's loss and celebrating his life.



Ron Pollack with his wife Marge.

May they rest in peace.

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